DOCKET

SUPREME COURT
OF THE UNITED STATES

No. 11-796
Title: Vernon Hugh Bowman, Petitioner
v.
Monsanto Company, et al.
Docketed: December 22, 2011
Lower Ct: United States Court of Appeals for the Federal Circuit
Case Nos.: (2010-1068)
Decision Date: September 21, 2011
Questions Presented

~~Date~~~	~~~~~~~Proceedings and Orders~~~~~~~~~~~~~~~~~~~~
Dec 20 2011	Petition for a writ of certiorari filed. (Response due January 23, 2012)
Jan 19 2012	Waiver of right of respondent Monsanto Company to respond filed.
Jan 25 2012	DISTRIBUTED for Conference of February 17, 2012.
Jan 26 2012	Response Requested . (Due February 27, 2012)
Feb 27 2012	Brief of respondents Monsanto Company, et al. in opposition filed.
Mar 14 2012	DISTRIBUTED for Conference of March 30, 2012.
Apr 2 2012	The Solicitor General is invited to file a brief in this case expressing the views of the United States.
Aug 24 2012	Brief amicus curiae of United States filed.
Sep 4 2012	Supplemental brief of petitioner Vernon Hugh Bowman filed.
Sep 5 2012	DISTRIBUTED for Conference of September 24, 2012.
Oct 1 2012	DISTRIBUTED for Conference of October 5, 2012.
Oct 5 2012	Petition GRANTED.
Nov 8 2012	The time to file the joint appendix and petitioner's brief on the merits is extended to and including December 3, 2012.
Nov 9 2012	The time to file respondents' brief on the merits is extended to and including January 16, 2013.
Dec 3 2012	Joint appendix filed (2 volumes). (Statement of costs filed.)
Dec 3 2012	Brief of petitioner Vernon Hugh Bowman filed.
Dec 10 2012	Brief amicus curiae of Knowledge Ecology International filed.
Dec 10 2012	Brief amici curiae of Automotive Aftermarket Industry Association, et al. filed.
Dec 10 2012	Brief amici curiae of American Antitrust Institute, et al. filed.
Dec 10 2012	Brief amicus curiae of Public Patent Foundation filed.
Dec 10 2012	Brief amici curiae of Center for Food Safety and Save Our Seeds filed.
Dec 18 2012	SET FOR ARGUMENT ON Tuesday, February 19, 2013.

Jan 4 2013	CIRCULATED.
Jan 4 2013	Consent to the filing of amicus curiae briefs, in support of either partry or of neither party, received from counsel for the respondents.
Jan 8 2013	Brief amicus curiae of United States filed. (Distributed)
Jan 9 2013	Record received form the U.S.C.A. for the Federal Circuit. (1 Box)
Jan 11 2013	Consent to the filing of amicus curiae briefs, in support of either party or of neither party, received from counsel for the petitioner.
Jan 16 2013	Brief of respondents Monsanto Company, et al. filed. (Distributed)
Jan 17 2013	Brief amicus curiae of BayhDole25, Inc. filed. (Distributed)
Jan 18 2013	Brief amicus curiae of Intellectual Property Owners Association filed. (Distributed)
Jan 22 2013	Brief amicus curiae of The New York !ntellectual Property Law Association filed. (Distributed)
Jan 23 2013	Brief amicus curiae of CropLife America filed. (Distributed)
Jan 23 2013	Brief amicus curiae of BSA - The Software Alliance filed. (Distributed)
Jan 23 2013	Brief amicus curiae of American Seed Trade Association filed. (Distributed)
Jan 23 2013	Brief amicus curiae of Washington Legal Foundation filed. (Distributed)
Jan 23 2013	Brief amicus curiae of Biotechnology Industry Organization filed. (Distributed)
Jan 23 2013	Brief amicus curiae of CropLife International filed. (Distributed)
Jan 23 2013	Brief amicus curiae of American Intellectual Property Law Association filed. (Distributed)
Jan 23 2013	Brief amici curiae of Ecomonists filed. (Distributed)
Jan 23 2013	Brief amicus curiae of law professor Christopher M. Holman filed. (Distributed)
Jan 23 2013	Brief amicus curiae of CHS Inc. filed. (Distributed)
Jan 23 2013	Brief amici curiae of Agilent Technologies, Inc., et al. filed. (Distributed)
Jan 23 2013	Brief amici curiae of Wisconsin Alumni Research Foundation, et al. filed. (Distributed)
Jan 23 2013	Brief amici curiae of American Soybean Association, et al. filed. (Distributed)
Jan 23 2013	Brief amicus curiae of Pioneeer Hi-Bred International, Inc. filed. (Distributed)
Jan 23 2013	Motion of the Solicitor General for leave to participate in oral argument as amicus curiae and for divided argument filed.
Jan 24 2013	Response from counsel for respondents to motion of the Solicitor General for divided argument and for leave to participate in oral argument as amicus curiae.
Feb 5 2013	Record from U.S.D.C. for the Southern District of Indiana is electronic.
Feb 11 2013	Reply of petitioner Vernon Hugh Bowman filed. (Distributed)
Feb 15 2013	Motion of the Solicitor General for leave to participate in oral argument as amicus curiae and for divided argument GRANTED, and the time is to be divided as follows: 30 minutes for petitioner, 10 minutes for the Solicitor General, and 30 minutes for respondents.
Feb 19 2013	Argued. For petitioner: Mark P. Walters, Seattle, Wash. For United States as amicus curiae: Melissa Arbus Sherry, Assistant to the Solicitor General, Department of Justice, Washington, D. C. For respondents: Seth P. Waxman, Washington, D. C.

PETITION FOR WRIT OF CERTIORARI

Supreme Court U.S.
FILED
DEC 20 2011
OFFICE OF THE CLERK

No. 11-796

IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY and
MONSANTO TECHNOLOGY LLC,

Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

PETITION FOR A WRIT OF CERTIORARI

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QUESTION PRESENTED

Patent exhaustion delimits rights of patent holders by eliminating the right to control or prohibit use of the invention after an authorized sale. In this case, the Federal Circuit refused to find exhaustion where a farmer used seeds purchased in an authorized sale for their natural and foreseeable purpose—namely, for planting. The question presented is:

Whether the Federal Circuit erred by (1) refusing to find patent exhaustion in patented seeds even after an authorized sale and by (2) creating an exception to the doctrine of patent exhaustion for self-replicating technologies?

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PETITION FOR A WRIT OF CERTIORARI

A seventy-four-year-old Indiana farmer, Vernon Hugh Bowman, respectfully submits this petition for a writ of certiorari to review the judgment of the United States Court of Appeals for the Federal Circuit.

OPINIONS BELOW

The opinion of the United States Court of Appeals for the Federal Circuit is reported at *Monsanto Co. v. Bowman*, 657 F.3d 1341 (Fed. Cir. 2011). Appendix ("App.") 1a-18a.

The opinion of the United States District Court for the Southern District of Indiana granting Monsanto Company's and Monsanto Technology LLC's motion for summary judgment of infringement is reported at *Monsanto Co. v. Bowman*, 686 F. Supp. 2d 834 (S.D. Ind. 2009). App. 31a-43a.

STATEMENT OF JURISDICTION

The United States Court of Appeals for the Federal Circuit entered judgment on September 21, 2011. The jurisdiction of this Court is proper based on 28 U.S.C. § 1254(1).

STATUTORY PROVISIONS INVOLVED

Section 271 of the Patent Act, 35 U.S.C. § 271, provides, in relevant part: Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United

States, or imports into the United States any patented invention during the term of the patent thereof, infringes the patent.

STATEMENT OF THE CASE

I. Monsanto's Roundup Ready® Technology and Its Technology Agreement.

Monsanto Company and Monsanto Technology LLC (collectively "Monsanto") developed biotechnology (App. 20a) that is at the heart of the present dispute. This technology permits Monsanto or one of its licensed seed producers to transfer a gene into the germplasm of seeds that causes those seeds to become resistant to glyphosate, a commonly used herbicide that Monsanto manufactures under the trademark Roundup®. *See id.* Monsanto markets these genetically altered seeds as Roundup Ready®. *Id.* Monsanto's Roundup Ready® seeds, which include soybeans, enable farmers to plant crops and apply a glyphosate-based herbicide, such as Roundup®, killing weeds without damaging the crops. *Id.*

Monsanto protects its glyphosate-resistant seeds by several patents. It asserted two of these patents against Petitioner Vernon Hugh Bowman ("Mr. Bowman"), U.S. Patent No. 5,352,605 ("the '605 patent") and U.S. Patent No. RE 39,247E ("the '247E patent"). App. 20a-21a. The '605 patent relates to the use of viral nucleic acid from the cauliflower mosaic virus ("CaMV"), which is capable of infecting plant cells, as a vector for incorporating new genetic material into plant cells. App. 3a. This action constitutes a "transformation" of the plant cells. *Id.* The invention of the '605 patent accomplishes the

transformation by isolating the CaMV promoter region from the CaMV genome and then combining the CaMV promoter region with a heterologous protein-encoding DNA sequence, thereby forming a chimeric gene expressed in the plant cell. *Id.*

The '247E patent also involves the transformation of plant cells. App. 4a. It uses, for example, the CaMV promoters of the '605 patent to transform plant cells with novel protein-encoding gene sequences that encode for a glyphosate-tolerant enzyme. *Id.* The genetically modified plants express the glyphosate-tolerant enzyme and therefore exhibit resistance to glyphosate. *Id.*

Monsanto goes to great lengths to restrict farmers' use of its patented biotechnology. It licenses seed producers to genetically alter seeds (including soybean seeds) by incorporating the Roundup Ready® biotechnology into the germplasm of the licensees' seeds, thus manufacturing seeds that are resistant to glyphosate. *See* App. 6a; App. 21a. Farmers then purchase these specially manufactured seeds from Monsanto or its licensed seed producers. App. 21a. Monsanto authorizes sales to farmers that agree to be bound by the terms of its Technology Agreement. *See* App. 6a.

Farmers that sign the Technology Agreement consent to several restrictions. Farmers agree: "(1) 'to use the seed containing Monsanto gene technologies for planting a commercial crop only in a single season'; (2) 'to not supply any of this seed to any other person or entity for planting'; (3) 'to not save any crop produced from this seed for replanting, or supply saved seed to anyone for replanting'; and (4) 'to not use this seed or provide it to anyone for crop

breading, research, generation of herbicide registration data, or seed production.'" App. 7a.

The Technology Agreement does not prohibit farmers from selling the progeny of their purchased seeds to grain elevators, and in fact Monsanto authorizes such sales. *Id.* As the Federal Circuit noted, "[a]lthough the express terms of the Technology Agreement forbid [farmers] to sell the progeny of the licensed Roundup Ready® seeds, or 'second-generation seeds,' for *planting*, Monsanto authorizes [farmers] *to sell* second-generation seed to local grain elevators as a commodity, *without requiring [farmers] to place restrictions on grain elevators' subsequent sales of that seed.*" *Id.* (emphasis added). Grain elevator commodity seeds comprise a mixture of undifferentiated seeds harvested from farms that grow Roundup Ready® seeds and those that do not. *Id.*

Monsanto restricts sales of its first-generation seeds to farmers that sign the Technology Agreement, and therefore agree not to use second-generation seeds for planting, due to the self-replicating nature of its patented biotechnology. "The principle business reason for Monsanto to limit the use of the resultant crop is that the herbicide resistance trait is carried forward into each successive generation of soybeans produced from the genetically altered seeds." App. 21a.

II. Mr. Bowman's Use of the Commodity Seeds.

Mr. Bowman farms acreage in Knox County, Indiana. App. 10a; App. 21a. In addition to other crops, Mr. Bowman harvests soybeans. App. 21a. As with many farmers, Mr. Bowman makes double use of his fields, planting "first-

crop" soybeans for his early season harvest and a second, riskier crop of soybeans for his late-season "second-crop." App. 9a; App. 22a. Since 1999, Mr. Bowman purchased Pioneer Hi-Bred® brand soybean seeds from Pioneer Hi-Bred ("Pioneer"), a Monsanto-licensed seed producer, for use as his first-crop soybeans. App. 8a-9a. In 2002, he signed a "Pioneer Hi-Bred Technology Agreement," which contains identical language and restrictions to those in the Monsanto Technology Agreement. *Id.* In accordance with that Agreement, Mr. Bowman never saved seeds from his first-crop harvest. App. 23a.

Beginning in 1999, Mr. Bowman purchased commodity seeds from Huey Soil Service, a local grain elevator, to use for his second-crop soybeans. App. 9a. Mr. Bowman purchased commodity seeds "so as not to incur the expense of the considerably more expensive Roundup Ready® seeds from Pioneer or other seed producers." App. 22a. He also applied a glyphosate-based herbicide to his second-crop soybeans, finding that the crop exhibited resistance to the herbicide. *Id.* Mr. Bowman repeated this activity from 2000 through 2007. App. 9a. "Unlike his first-crop, [he] saved the seed harvested from his second-crop for replanting additional second-crops in later years. He also supplemented his second-crop planting supply with periodic additional purchases of commodity seed from the grain elevator." *Id.*

Monsanto eventually realized that Mr. Bowman was growing more soybeans than his Pioneer purchases could generate. App. 23a. Monsanto then accused Mr. Bowman of saving seeds, in violation of the Technology Agreement. *Id.* Mr. Bowman candidly explained his use of second-crop commodity soybean seeds, arguing that his actions did not

constitute infringement. *Id.* Mr. Bowman also explained to the district court that the use of commodity soybeans for planting was something farmers have been doing for generations. Monsanto sued Mr. Bowman on October 12, 2007, alleging infringement of the '605 patent and the '247E patent. App. 10a.

III. The District Court's Decisions.

On September 30, 2008, Monsanto filed a motion for summary judgment, seeking a final determination of liability and damages for Mr. Bowman's alleged patent infringement. App. 31a. On June 11, 2009, the court requested further submissions on summary judgment regarding the applicability of the patent exhaustion doctrine in light of this Court's decision in *Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617 (2008). App. 19a-30a. In the end, however, the district court found itself bound by Federal Circuit precedent. The court explained that, "despite [Mr.] Bowman's compelling policy arguments addressing the monopolizing effect of the introduction of patented genetic modifications to seed producing plants on an entire crop species, he has not overcome the patent law precedent which breaks in favor of Monsanto[.]" App. 37a.

After reviewing the parties' arguments concerning exhaustion, and finding the Federal Circuit's decision in *Monsanto Co. v. McFarling*, 302 F.3d 1291 (Fed. Cir. 2002) controlling, the district court granted Monsanto's motion for summary judgment and awarded damages to Monsanto. App. 31a-43a. On May 12, 2010, the court increased the damage award because it had based its initial award on an incorrect reading of Monsanto's reasonable royalty report. *See* App. 46a-51a.

IV. The Federal Circuit's Decision.

After a timely appeal, the Federal Circuit, having jurisdiction to hear Mr. Bowman's case under 28 U.S.C. § 1295(a)(1), affirmed the district court's judgment. App. 2a. It rejected the argument that exhaustion prohibited Monsanto from suing Mr. Bowman for using commodity seeds for planting purposes. App. 14a. The court of appeals held that Mr. Bowman, by using the commodity seeds for a natural and foreseeable purpose (planting), "created a newly infringing article." *See id.* In reaching its decision, the lower court relied heavily on *McFarling* and *Monsanto Co. v. Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006), two prior Monsanto seed saving cases based in part on the oft maligned, judicially created "conditional sale" exception to patent exhaustion set forth by the Federal Circuit in *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700 (Fed. Cir. 1992). App. 14a.

In both *McFarling* and *Scruggs*, the Federal Circuit held that exhaustion did not apply to free second-generation seeds from Monsanto's patent rights. *See* App. 12a-14a. Although McFarling petitioned this Court to review an adverse Federal Circuit decision, he did not seek review of the lower court's exhaustion ruling, which was a decision in the context of a preliminary injunction. *See McFarling v. Monsanto Co.*, No. 04-31, 2004 WL 1535852 (2004). Nevertheless, the Solicitor General, in his brief recommending against granting certiorari (where McFarling had abandoned the exhaustion defense), explained that the applicability of patent exhaustion in the context of self-replicating technologies raises a novel question that this Court has not yet addressed. *See U.S. Amicus Br.* at 14 n.8, *McFarling v. Monsanto Co.*, 545 U.S. 1139 (2005) (No. 04-31).

Drawing from *McFarling* and *Scruggs*, the Federal Circuit justified its holding in this case on the grounds that Mr. Bowman's activities constituted impermissible making, rather than valid use, of a patented article. *See* App. 14a. It explained that "[e]ven if Monsanto's patent rights in the commodity seeds are exhausted, such a conclusion would be of no consequence because once a [farmer], like [Mr.] Bowman, plants the commodity seeds containing Monsanto's Roundup Ready® technology and the next generation of seed develops, the [farmer] has created a newly infringing article." *Id.* The court reaffirmed its opinion that the "fact that a patented technology can *replicate itself* does not give the purchaser the right to use replicated copies of the technology." *Id.* (emphasis added).

The court relied on its decision in *Jazz Photo Corp. v. Int'l Trade Comm'n*, 264 F.3d 1094 (Fed. Cir. 2001), to support the distinction between the right to make versus the right to use a patented article. "The right to use 'do[es] not include the right to construct an essentially new article on the template of the original, for the right to make the article remains with the patentee.'" *Id.* The court concluded by stating that farmers "have the right to use commodity seeds ... for any other conceivable use, [but] they cannot 'replicate' Monsanto's patented technology by planting it in the ground to create newly infringing" articles. *Id.* In other words, farmers can do anything they desire with purchased commodity seeds, except use those seeds for their most natural and foreseeable (if not primary) purpose, planting.

REASONS FOR GRANTING THE PETITION

This case presents an issue both of core practical importance to agriculture and of vital legal interest in patent law—whether the Federal Circuit's judicially created "conditional sale" exemption that allows patent holders to continue to assert patent rights after an authorized sale is correct. Practically, this issue affects every farmer in the country and the method of planting that farmers such as Mr. Bowman have used for generations. Legally, the Federal Circuit's opinion is in conflict with the existing law of this Court. In *United States v. Univis Lens Co.*, this Court held that exhaustion results from an authorized sale, notwithstanding post-sale restrictions on end-purchasers. The Federal Circuit has departed from this rule since 1992 with the decision in *Mallinckrodt, Inc. v. Medipart, Inc.* And its decision in this case serves to completely eliminate exhaustion as a viable defense to patent infringement claims in the context self-replicating technologies such as genetically modified seeds. Because this case presents an important legal issue from the Federal Circuit in conflict with this Court's precedents and of great practical importance to a wide swath of this country's economy, this Court should grant certiorari and review the decision below.

I. The Federal Circuit's Decision Conflicts with the Doctrine of Patent Exhaustion as Defined by This Court.

A. This Court's Cases Establish that Authorized Sales Accompanied by Post-Sale Restrictions on Purchasers Exhaust Patent Rights.

Patent exhaustion has been the law in this Country for more than 150 years. Since at least this Court's decision in *United States v. Univis Lens Co.*, 316 U.S. 241 (1942), patent exhaustion has applied notwithstanding a patent holder's attempt to create explicit post-sale restrictions such as the ones Monsanto has tried here. In *Univis* and its predecessor cases, this Court articulated the clear rule that a sale authorized by the patent owner exhausts patent rights in the article sold. *Univis*, 316 U.S. at 250-51; *Motion Picture Patents Co. v. Universal Film Mfg.*, 243 U.S. 502, 516 (1917); *Keeler v. Standard Folding Bed Co.*, 157 U.S. 659, 670-71 (1895); *Adams v. Burke*, 84 U.S. 453, 455 (1873).

In *Univis*, the patent owner created a licensing scheme comparable to that imposed by Monsanto on its licensed seed producers and their customers. The patent owner attempted, through separate agreements with its licensee's purchasers, to impose resale price restrictions on those purchasers. *Univis*, 316 U.S. at 243-45. This Court held that the restrictions were not within the scope of the patent grant because the licensee's sale of products embodying the patent owner's invention exhausted the owner's patent rights in those products. *Id.* at 250-51. Accordingly, because exhaustion removed the article from the protection of the patent monopoly, restrictions

on use or resale were not immune from antitrust scrutiny. In *Quanta Computer, Inc. v. LG Elecs., Inc.*, this Court affirmed the continuing vitality of *Univis* specifically and of the exhaustion doctrine in general. *See Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617, 631 (2008) (stating that "*Univis* governs this case").

Patent exhaustion provides that the authorized first sale of a patented product or an article that "embodies" an invention exhausts patent rights over that article. *See, e.g., Quanta*, 553 U.S. at 623; *Univis*, 316 U.S. at 249; *Motion Picture Patents*, 243 U.S. at 516; *Keeler*, 157 U.S. at 670-71; *Adams*, 84 U.S. at 455. Under the doctrine, a patentee who sells an article embodying the invention (either directly or through an authorized licensee) cannot bring a patent infringement suit against the purchaser for using the article for its reasonable and intended use or for reselling the article to others. *See, e.g., Univis*, 316 U.S. at 250-52.

Patent exhaustion owes its origin to the common-law doctrine against restraints on alienation of chattels, which dates to the 15th century. *See Dr. Miles Med. Co. v. John D. Parke & Sons Co.*, 220 U.S. 373, 383 (1911). Patent exhaustion, as known today, has been the rule in this country since at least 1853. *See Bloomer v. McQuewan*, 55 U.S. (14 How.) 539, 549 (1853).

The doctrine delimits the exclusive rights afforded a patentee under the patent laws. As this Court explained in two of its earliest exhaustion cases, "when the patentee, or a person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use.

The article ... passes without the limit of the monopoly." *Adams*, 84 U.S. at 456 (citing *McQuewan*, 55 U.S. (14 How.) at 549, and *Mitchell v. Hawley*, 83 U.S. 544 (1873)).

Whether downstream limitations after the first authorized sale are enforceable is "a question of contract, and not ... one under the inherent meaning and effect of the patent laws." *Keeler*, 157 U.S. at 666; *see also Motion Picture Patents*, 243 U.S. at 509, 513; *McQuewan*, 55 U.S. (14 How.) at 549-50. Accordingly, if the patent owner wishes to control a purchaser's subsequent use of a patented article, it must do so under contract law. *See, e.g.*, *McQuewan*, 55 U.S. (14 How.) at 549-50 (explaining that patent owners "must seek redress in the courts of the State ... and not in the courts of the United States, nor under the law of Congress granting the patent" after an authorized first sale).

The purchaser of a patented article therefore obtains that article free from the patent monopoly, but subject to any agreed upon contractual restrictions. A purchaser "becomes possessed of an absolute property in such [patented] articles, unrestricted in time or place," and it would be inconsistent with that property right for the patent owner to control, under the patent, the purchaser's downstream use or disposition of the product. *Keeler*, 157 U.S. at 666. Indeed, "the purchase of the article from one authorized by the patentee to sell it[] emancipates such article from any further subjection to the patent throughout the entire life of the patent[.]" *Id.*

B. Since 1992, the Federal Circuit Has Departed From This Court's Exhaustion Case Law.

Since the Federal Circuit's 1992 decision in *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700 (Fed. Cir. 1992), it has unduly expanded the scope of patent rights by limiting this Court's *Univis* decision to the antitrust context. The court decided to restrict the doctrine, finding that exhaustion applied only to an authorized *and unconditional* sale (or where a condition exceeded the scope of the patent grant). *Id.* at 708-09. In *Mallinckrodt*, the patentee manufactured and sold to hospitals a medical device marked with a "single use only" notice. *Id.* at 701. The devices were capable of reuse, and many hospitals sent them to the defendant for reconditioning. *Id.*

The Federal Circuit concluded that the post-sale "single use only" restriction was enforceable by patent law and that the defense of patent exhaustion did not apply. *Id.* at 703-09. In order to reach this conclusion, the Federal Circuit interpreted this Court's exhaustion cases as merely establishing that "price-fixing and tying restrictions accompanying the sale of patented goods were *per se* illegal." *Id.* at 704.

Mallinckrodt also conflated post-sale restrictions that are enforceable by contract law (notwithstanding antitrust concerns) with a patentee's attempt to enforce post-sale restrictions through patent law. The Federal Circuit explained that this Court's cases, including *Motion Picture Patents*, "did not hold ... that all restrictions accompanying the sale of patented goods were deemed illegal." *Id.* at 704. This reasoning, however, confuses two distinct concepts—whether a restriction is illegal,

and therefore cannot be enforced even by contract, and whether a post-sale restriction avoids exhaustion.

Exhaustion does not address the legality of a post-sale restriction. Rather, exhaustion is a defense to the application of patent law following an authorized sale—regardless of the presence of legal or illegal contractual limitations on that sale—and an unbroken line of this Court's cases leading to the Federal Circuit's decision in *Mallinckrodt* held that patent rights terminate at the point of sale. Exhaustion is triggered "if a person legally acquires a title to" a patented item, *Chaffee v. Boston Belting Co.*, 63 U.S. (22 How.) 217, 223 (1859); when a patented item is "lawfully made and sold," *Adams*, 84 U.S. (17 Wall.) at 457; *see also Hobbie*, 149 U.S. at 363; where a patented item "passes to the hands of the purchaser," *McQuewan*, 55 U.S. (14 How.) at 549; or upon "the purchase of the article from one authorized by the patentee to sell it," *Keeler*, 157 U.S. at 666.

Mallinckrodt, in addition to limiting this Court's exhaustion jurisprudence, greatly (and unjustifiably) expanded the holding of *General Talking Pictures Corp. v. Western Elec. Co.*, 305 U.S. 124, 127 (1938). *General Talking Pictures* and its related cases, including *United States v. General Elec. Co.*, 272 U.S. 476, 489-90 (1926), *Bement v. National Harrow Co.*, 186 U.S. 70, 91 (1902), and *Mitchell*, 83 U.S. (16 Wall.) at 547-51, stand for the unremarkable proposition that patent owners can force mere licensees, or parties without title to a patented article, to comply with conditions, including field-of-use restrictions, on pain of liability for patent infringement.

Under *General Talking Pictures*, patent owners can sue their licensees for infringement when they violate the scope of their licenses. Owners cannot, however, sue purchasers of patented articles for patent infringement where they breach a post-sale restriction. This Court has long permitted these seemingly dichotomous rules of law, namely, exhaustion and the doctrine permitting limited manufacturing licenses enforceable by patent law. In 1926, this Court observed that:

> It is well settled ... that where a patentee makes the patented article and sells it, he can exercise no further control over what the purchaser may wish to do with the article after his purchase. It has passed beyond the scope of the patentee's rights. But the case is a different one ... when we consider what a patentee who grants a license to one to make and vend the patented article may do in limiting the licensee in the exercise of the right to sell.

General Elec. Co., 272 U.S. at 489-90.

Mallinckrodt's questionable holding has not gone undetected. Commentators and scholars have described *Mallinckrodt* as inconsistent with long-standing precedent from this Court and view the decision as an improper expansion of the limited manufacturing license doctrine set forth in *General Talking Pictures*. *See, e.g.*, Thomas G. Hungar, *Observations Regarding the Supreme Court's Decision in Quanta Computer, Inc. v. LG Electronics, Inc.*, 49 IDEA 517, 538-39 (2009); Richard H. Stern, *The Unobserved Demise of the Exhaustion Doctrine in US Patent Law*, 15 EUR. INTELL. PROP. REV. 460 (1993).

At least one district court held that *Quanta* overruled *Mallinckrodt*. *See Static Control Components, Inc. v. Lexmark Int'l, Inc.*, 615 F. Supp. 2d 575, 585 (E.D. Ky. 2009) (finding that *Quanta* overruled *Mallinckrodt* "*sub silentio*").

The Federal Circuit's attack on this Court's exhaustion doctrine did not end with *Mallinckrodt*. Following that case, the Federal Circuit decided *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419 (Fed. Cir. 1997). *B. Braun* has been widely cited, together with *Mallinckrodt*, as having established the conditional sale doctrine. This principle stems from the *Mallinckrodt* case and holds that the "exhaustion doctrine ... does not apply to an expressly conditional sale or license." *Id.* at 1426. Despite this broad proclamation, *B. Braun* was a case about a patent misuse jury instruction; it did not involve the patent exhaustion defense. *See id.*

Mallinckrodt and *B. Braun* do not find support in this Court's cases. This Court has held that licenses can carry conditions, the breach of which subjects the licensee (and potentially its purchasers) to a suit for patent infringement. *See General Talking Pictures*, 305 U.S. at 127. This Court has also made clear, however, that purchasers of discrete patented articles stand on entirely different ground than mere licensees. *See General Elec. Co.*, 272 U.S. at 489-90. *Mallinckrodt*'s and *B. Braun*'s focus on whether a post-sale restriction "exceeds the scope of the patent grant" in a determination whether the defense of patent exhaustion applies fails under this Court's cases because, as *Univis* made clear, *no* restriction after an authorized sale is enforceable by patent law. *See Univis*, 316 U.S. at 250-51.

C. The Federal Circuit's Decision Below Ensures that Exhaustion Cannot Apply to Authorized Sales of Monsanto's Patented Seeds.

Through the trilogy of *McFarling*, *Scruggs*, and the case currently under review, the Federal Circuit has guaranteed Monsanto an unprecedented level of protection, ensuring that exhaustion can never apply to patented seeds. These cases amount to a judicially created exception for Monsanto to the doctrine of patent exhaustion. Relying on its decisions in *Mallinckrodt* and *B. Braun*, the court of appeals holds that exhaustion does not apply to first-generation seeds sold by Monsanto or its licensed seed producers because those sales are "conditioned" on farmers signing the Technology Agreement. *Scruggs*, 459 F.3d at 1336 (stating that the "doctrine of patent exhaustion is inapplicable in this case ... because the use of the seeds by ... [farmers] was conditioned on obtaining a license from Monsanto"). When a farmer uses first-generation seeds to plant and harvest a second-generation crop, exhaustion also does not apply to the second-generation seeds because they were not sold to the farmer. *McFarling*, 302 F.3d at 1298-99. Finally, under the lower court's reasoning in this case, exhaustion does not result for all subsequent seed generations because farmers "make" progeny seeds rather than "use" purchased seeds. *Bowman*, 657 F.3d at 1348 (holding that once a farmer, "like [Mr.] Bowman, plants the commodity seeds containing Monsanto's Roundup Ready® technology and the next generation of seed develops, the [farmer] has created a newly infringing article").

Accordingly, under the reasoning applied by the Federal Circuit, exhaustion has been eliminated after

any authorized sale, no matter what the context might be. Farmers, like Mr. Bowman, who purchase seeds in unrestricted, authorized sales from grain elevators cannot use those seeds for a foreseeable purpose, planting, without infringing Monsanto's patents. *See id.* at 1345 (explaining that a farmer does not "exceed[] the [Technology Agreement] license by selling to the grain elevator without securing some promise from the grain elevator not to sell the seeds for planting"). Under the lower court's holding, farmers become inevitable infringers when they use commodity seeds for a common and intended purpose. The district court, although reluctantly finding itself bound by *McFarling*, correctly realized the unfairness caused by this situation:

> Monsanto's domination of the soybean seed market, combined with the regeneration of the Roundup Ready® trait and the lack of any restriction against the mixing of soybeans harvested from a Roundup Ready® crop from those that are harvested from a crop that was not grown from Roundup Ready® seed, has resulted in the commodity soybeans sold by grain dealers necessarily carrying the patented trait, thereby eliminating commodity soybeans as a low cost (but higher risk) source for planting.

Monsanto Co. v. Bowman, 686 F. Supp. 2d 834, 836-37 (S.D. Ind. 2009).

D. The Federal Circuit's Decision Below Relies on the Unsupportable Proposition that Farmers "Make" New Seeds by the Natural and Foreseeable Use of Planting.

The court reached the conclusion that Mr. Bowman "created" a newly infringing article by relying in part on the statement in *Jazz Photo* that the right to use does not include the right to construct a newly infringing article. *Bowman*, 657 F.3d at 1348. But *Jazz Photo* offers nothing to support the court's decision in this case. *Jazz Photo* addressed whether various defendants had engaged in permissible *repair* or impermissible *reconstruction* of refurbished single-use cameras. It did not elaborate on the differences between "to use" and "to construct" or "to make." In fact, *Jazz Photo* acknowledged that "[t]he purchaser of a patented article has the rights of any owner of personal property, including the right *to use* it, repair it, modify it, discard, it, or resell it[.]" *Jazz Photo*, 264 F.3d at 1102 (emphasis added). The case does not support the conclusion that Mr. Bowman's activities actually constituted *construction* of a new article, rather than *use* of articles he owned following purchase in a sale authorized by the patent holder.

The terms "make," "construct," and "manufacture" do not describe the process by which progeny are created through the use of self-replicating technologies. To be sure, Monsanto-licensed seed producers "make" or "construct" seeds containing Monsanto's patented traits when they artificially insert patented germplasm into naturally occurring soybean seeds. As the Federal Circuit acknowledged in *McFarling*, "Monsanto authorizes various companies to *manufacture* the patented seeds."

McFarling, 302 F.3d at 1293 (emphasis added). The activity of these companies in making seeds differs in fundamental ways from the activities of farmers in using them. Seeds *manufactured* by seed producers will *self-replicate* without farmer assistance; even if left untended on a field, they will replicate and produce new generations. The Federal Circuit cannot reconcile defining both activities as "making." Progeny seeds that result from planting are "begotten," not "made."

II. This Case Is an Appropriate Vehicle to Resolve the Specific and Important Question Presented Regarding the Applicability of Patent Exhaustion to Self-Replicating Technologies.

The Solicitor General explained in *McFarling v. Monsanto Co.* that patent exhaustion in the context of self-replicating technologies raises a novel question not yet decided by this Court. *See U.S. Amicus Br.* at 14 n.8, *McFarling v. Monsanto Co.*, 545 U.S. 1139 (2005) (No. 04-31). In his brief recommending against certiorari, the Solicitor General stated that "the novel question whether (and, if so, to what extent) the patent-exhaustion doctrine applies to" limits on use of self-replicating inventions was not ripe for review in the *McFarling* case. *Id.* The Solicitor General advised this Court not to address the issue at that time, in part because it had not been fully litigated in the lower courts. *See id.*

Unlike *McFarling*, the current case presents a perfect vehicle for this Court to address a question of fundamental importance concerning the availability of the exhaustion defense to self-replicating technologies. This case comes to the Court from a final judgment of infringement where

both the district court and court of appeals focused on the availability of exhaustion to such inventions. No disputed facts exist here. The outcome turns on a pure legal question. Further percolation in the Federal Circuit and district courts will not benefit this Court, as the Federal Circuit has made clear that it considers self-replicating technologies to be a subset of inventions immune from patent exhaustion.

CONCLUSION

The petition for a writ of certiorari should be granted.

Respectfully submitted,

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APPENDIX

APPENDIX A — OPINION OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT DECIDED SEPTEMBER 21, 2011

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

MONSANTO COMPANY AND
MONSANTO TECHNOLOGY LLC,

Plaintiffs-Appellees,

v.

VERNON HUGH BOWMAN,

Defendant-Appellant.

2010-1068

Appeal from the United States District Court for the Southern District of Indiana in case no. 07-CV-0283, Judge Richard L. Young.

Decided: September 21, 2011

PAUL R. Q. WOLFSON, Wilmer Cutler Pickering Hale and Dorr LLP, of Washington, DC, for plaintiffs-appellees. With him on the brief were SETH P. WAXMAN and GREGORY H. LANTIER; and DAVID B. JINKINS, Thompson Coburn LLP, of St. Louis, Missouri. Of counsel were DANIEL C. COX and JEFFREY A. MASSON, Thompson Coburn, LLP, of St. Louis, Missouri.

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MARK P. WALTERS, Frommer Lawrence & Haug LLP, of Seattle, Washington, for defendant-appellant. With him on the brief were DARIO A. MACHLEIDT; and EDGAR H. HAUG, of New York, New York.

TIMOTHY C. MEECE, Banner & Witcoff, Ltd., Chicago, Illinois, for amicus curiae Lexmark International, Inc.

Before BRYSON, LINN, and DYK, *Circuit Judges*. LINN, *Circuit Judge*.

This case presents the court with another question of patent infringement by farmers planting the progeny of genetically altered seeds covered by U.S. patents. Here, Plaintiffs-Appellees, Monsanto Company and Monsanto Technology LLC (collectively "Monsanto"), sued Defendant-Appellant, Vernon Hugh Bowman ("Bowman"), in the United States District Court for the Southern District of Indiana alleging infringement of U.S. Patent Nos. 5,352,605 ("'605 Patent") and RE39,247E ("'247E Patent"). *Monsanto Co. v. Bowman*, 686 F. Supp. 2d 834 (S.D. Ind. 2009). The district court granted summary judgment of infringement in favor of Monsanto. *Id.* at 840. Bowman appeals. For the reasons discussed below, this court affirms.

I. Background

Monsanto invented and developed technology for genetically modified "Roundup Ready®" soybeans that exhibit resistance to N-phosphonomethylglycine-

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(commonly known as "glyphosate") based herbicides, such as Monsanto's Roundup® product. The '605 and '247E Patents cover different aspects of this Roundup Ready® technology.

A. The '605 Patent

On October 4, 1994, the United States Patent and Trademark Office ("PTO") issued the '605 Patent to Monsanto for "chimeric genes for transforming plant cells using viral promoters." The invention of the '605 Patent relates to the use of viral nucleic acid from the cauliflower mosaic virus ("CaMV"), a virus capable of infecting plant cells, as a vector for incorporating new genetic material into plant cells (a "transformation" of the plant cells). To accomplish this transformation, the CaMV promoter region is isolated from the CaMV genome and combined with a heterologous protein-encoding DNA sequence, forming a chimeric gene to be expressed in the plant cell. Monsanto alleges infringement of claims 1, 2, 4, and 5 of the '605 Patent. Representative claims 1 and 4 cover:

> 1. A *chimeric gene* which is expressed in plant cells comprising a promoter from a cauliflower mosaic virus, said promoter selected from the group consisting of a CaMV (35S) promoter isolated from CaMV protein-encoding DNA sequences and a CaMV (19S) promoter isolated from CaMV protein-encoding DNA sequences, and a structural sequence which is heterologous with respect to the promoter.

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> 4. A *plant cell* which comprises a chimeric gene that contains a promoter from cauliflower mosaic virus . . . .

'605 Patent, col.15 ll.52-59, 64-65 (emphases added).

B. The '247E Patent

On August 22, 2006, the PTO reissued U.S. Patent No. 5,633,435 ("'435 Patent") as the '247E Patent for "glyphosate-tolerant 5-enolpyruvylshikimate-3-phosphate synthases [("EPSPS")]." The invention of the '247E Patent involves the transformation of plant cells—using, for example, the CaMV promoters disclosed in the '605 Patent—to transform plant cells with novel protein- encoding gene sequences that encode for EPSPS, a glyphosate-tolerant enzyme. These genetically modified plants express EPSPS and exhibit glyphosate resistance. '247E Patent, col.1 ll.15-46. The advantage of this technology, which can be incorporated into a variety of crops, is that farmers can treat their fields with glyphosate-based herbicide to control weed growth without damaging their crops. Monsanto alleges infringement of seventeen claims of the '247E Patent. Representative claims 103, 116, 122, 128, 129, and 130 cover:

> **103.** A *recombinant, double-stranded DNA molecule* comprising in sequence:
>
> (a) a promoter which functions in plant cells to cause the production of an RNA sequence;

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(b) a structural DNA sequence that causes the production of an RNA sequence which encodes an EPSPS enzyme having the sequence of SEQ ID NO:70; and

(c) a 3' non-translated region that functions in plant cells to cause the addition of a stretch of polyadenyl nucleotides to the 3' end of the RNA sequence;

where the promoter is heterologous with respect to the structural DNA sequence and adapted to cause sufficient expression of the encoded EPSPS enzyme to enhance the glyphosate tolerance of a plant cell transformed with the DNA molecule.

116. A glyphosate-tolerant *plant cell* comprising a DNA sequence encoding and EPSPS enzyme having the sequence of SEQ ID NO: 70.

122. A *seed of the plant* of claim 116, wherein the seed comprises the DNA sequence encoding an EPSPS enzyme having the sequence of SEQ ID NO: 70.

128. A glyphosate[-]tolerant *plant cell* comprising the recombinant DNA molecule of claim 103.

129. A *plant* comprising the glyphosate[-] tolerant plant cell of claim 128.

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> **130.** A *method for selectively controlling weeds* in a field containing a crop having planted crop seeds or plants comprising the steps of:
>
> (a) planting the crop seeds or plants which are glyphosate-tolerant as a result of a recombinant double-stranded DNA molecule being inserted into the crop seed or plant . . .
>
> (b) applying to the crop and weeds in the field a sufficient amount of glyphosate herbicide to control the weeds without significantly affecting the crop.

'247E Patent, col.164 ll.15-29; col.165 ll.18-20, 30-32, 45-55; col.166 ll.3-5 (emphases added to reflect breadth of coverage).

C. Monsanto's Technology Agreement

Since 1996, Monsanto has marketed and sold Roundup Ready® soybean seeds under its own brands, and licenses its technology to seed producers who insert the Roundup Ready® genetic trait into their own seed varieties. Monsanto's licensed producers sell Roundup Ready® seeds to growers for planting. All sales to growers, whether from Monsanto or its licensed producers, are subject to a standard form limited use license, called the "Monsanto Technology Agreement" or "Monsanto Technology/ Stewardship Agreement" (both referred to herein-after as the "Technology Agreement"). J.A. 284-315. Monsanto's Technology Agreement covers a variety of its patented

agricultural biotechnologies, including Roundup Ready® soybeans. Both the '605 Patent and the '435 Patent (reissued as the '247E Patent) are listed as "applicable patents" licensed under the Technology Agreement.

Under the Technology Agreement, the licensed grower agrees: (1) "to use the seed containing Monsanto gene technologies for planting a commercial crop only in a single season"; (2) "to not supply any of this seed to any other person or entity for planting"; (3) "to not save any crop produced from this seed for replanting, or supply saved seed to anyone for replanting"; and (4) "to not use this seed or provide it to anyone for crop breeding, research, generation of herbicide registration data, or seed production." Monsanto's Standard Form Technology Agreements, 1998-2007, J.A. 284-315. Monsanto restricts the grower's use of the licensed Roundup Ready® seed to a single commercial crop season because the patented Roundup Ready® genetic trait carries forward into each successive seed generation.

Although the express terms of the Technology Agreement forbid growers to sell the progeny of the licensed Roundup Ready® seeds, or "second-generation seeds," for planting, Monsanto authorizes growers to sell second-generation seed to local grain elevators as a commodity, without requiring growers to place restrictions on grain elevators' subsequent sales of that seed. Commodity seeds are a mixture of undifferentiated seeds harvested from various sources, including from farms that grow Roundup Ready® soybeans and those that do not, although nearly ninety-four percent of

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Indiana's acres of soybeans planted in 2007 were planted using herbicide resistant varieties. Damages Report at 2, *Monsanto v. Bowman*, No. 07-cv-0283 (S.D. Ind. Sept. 30, 2008), ECF No. 62-7. Before this court, Monsanto has twice eschewed any reading of the Technology Agreement to prohibit unrestricted seed sales to grain elevators as a commodity. First, Monsanto stated in its appeal brief that "[a] licensed grower who has harvested a soybean crop from Roundup Ready® seeds obtained in an authorized manner *may sell that crop* to be used as feed *or otherwise as a commodity*." Appellee Br. 7 (emphases added). Again, at oral argument, when asked by the panel whether a grower "exceed[s] the license by selling to the grain elevator without securing some promise from the grain elevator not to sell the seeds for planting," Monsanto's attorney responded: "No, I don't think the grower is exceeding his authority there . . . that is a channel of commerce that Monsanto has authorized." Oral Arg. at 19:34-20:14, *available at* http://www.cafc.uscourts.gov/oral-argument-recordings/all/bowman.html. Based on Monsanto's statements, the only permissible reading of the Technology Agreement for purposes of this appeal is that it authorizes growers to sell seed to grain elevators as a commodity.

D. Bowman's Activities

Pioneer Hi-Bred ("Pioneer") is one of Monsanto's licensed seed producers. In 2002, Pioneer sold Pioneer Hi-Bred® brand seeds containing the Roundup Ready® technology to Bowman, a grower in Knox County, Indiana. In making the sale, Pioneer required Bowman

to execute the "Pioneer Hi-Bred Technology Agreement," which contains language and restrictions identical to the Technology Agreements discussed above. *See* J.A. 673. Bowman purchased from Pioneer and planted seeds containing the Roundup Ready® technology each year, beginning as early as 1999. Bowman planted Roundup Ready® seeds as his first-crop in each growing season during the years 1999 through 2007. Consistent with the terms of the Technology Agreement, Bowman did not save seed from his first-crop during any of those years.

In 1999, Bowman also purchased commodity seed from a local grain elevator, Huey Soil Service, for a late-season planting, or "second-crop." Because Bowman considered the second-crop to be a riskier planting, he purchased the commodity seed to avoid paying the significantly higher price for Pioneer's Roundup Ready® seed. That same year, Bowman applied glyphosate-based herbicide to the fields in which he had planted the commodity seeds to control weeds and to determine whether the plants would exhibit glyphosate resistance. He confirmed that many of the plants were, indeed, resistant. In each subsequent year, from 2000 through 2007, Bowman treated his second-crop with glyphosate-based herbicide. Unlike his first-crop, Bowman saved the seed harvested from his second-crop for replanting additional second-crops in later years. He also supplemented his second-crop planting supply with periodic additional purchases of commodity seed from the grain elevator. Bowman did not attempt to hide his activities, and he candidly explained his practices with respect to his second-crop soybeans in various correspondence with Monsanto's representatives.

In winter 2006, Monsanto contacted Bowman, seeking to investigate his planting activities. On October 12, 2007, Monsanto sued Bowman in the Southern District of Indiana alleging infringement of the '605 and '247E Patents. On November 2, 2007, Monsanto investigated eight of Bowman's fields, totaling 299.1 acres, and confirmed that Bowman's second-crop soybean seeds (the progeny of the commodity seeds) contained the patented Roundup Ready® technology. The Technology Agreement signed by Bowman extended only to seeds purchased from Monsanto or a licensed dealer; thus, Bowman's use of the commodity seeds was not within the scope of the agreement. Monsanto did not allege infringement or breach of the Technology Agreement with respect to Bowman's planting of first-generation seeds purchased from Pioneer.

On September 30, 2009, the district court granted summary judgment of infringement and entered judgment for Monsanto in the amount of $84,456.20. Am. Final J. and Order Granting Pls.' Rule 59 Mot., *Bowman*, No. 07-cv-0283 (May 12, 2010), ECF Nos. 130, 131. Bowman appeals, and this court has jurisdiction under 35 U.S.C. § 1295(a)(1).

II. Discussion

A. Standard of Review

This court reviews a district court's order granting a motion for summary judgment *de novo*. *See, e.g.*, *Leviton Mfg. Co. v. Universal Sec. Instruments, Inc.*, 606 F.3d 1352, 1358 (Fed. Cir. 2010).

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B. Patent Exhaustion

Bowman argues that Monsanto's patent rights are exhausted with respect to all Roundup Ready® soybean seeds that are present in grain elevators as undifferentiated commodity. According to Bowman, the "[s]ales of second-generation seeds by growers to grain elevators, and then from grain elevators to purchasers (like Bowman) are authorized according to the terms of Monsanto's [T]echnology [A]greement[], and are thus exhausting sales. . . under the Supreme Court's analysis in *Quanta* [*Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008)]." Appellant Br. 23.

Bowman further argues that if the right to use patented seeds does not include the unlimited right to grow subsequent generations free of liability for patent infringement, then any exhaustion determination "is useless." Appellant Br. 31. Bowman urges the court to hold, under *Quanta*, that each seed sold is a "substantial embodiment" of all later generations, thus adopting a "robust" exhaustion doctrine that encompasses the progeny of seeds and other self-replicating biotechnologies. According to Bowman, "[t]he Supreme Court disapproved undermining the exhaustion doctrine by categorically eliminating its application [to] method patents [and t]his [c]ourt should not condone effectively eliminating the doctrine for self-replicating products." Appellant Br. 31.

Monsanto counters that licensed growers' sales of second-generation seeds to grain elevators as commodity seeds did not exhaust Monsanto's patent rights in

those seeds "[b]ecause of the express condition [in the Technology Agreement] that the progeny of licensed seed never be sold for planting." Appellee Br. 32. According to Monsanto, "a grower's sale of harvested soybeans to a grain elevator is not an 'authorized sale' when it results in those soybeans subsequently being planted." *Id.*

Monsanto argues that, even if there was exhaustion with respect to commodity seeds, Bowman is nevertheless liable for infringement by planting those seeds because patent protection "is independently applicable to *each* generation of soybeans (or other crops) that contains the patented trait." *Id.* 15-16. *See Monsanto Co. v. Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006); *Monsanto Co. v. McFarling*, 302 F.3d 1291 (Fed. Cir. 2002). Monsanto contends that "under Bowman's analysis, patent protection for self-replicating inventions would be eviscerated." Appellee Br. 20. Monsanto further cites *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc.*, 534 U.S. 124 (2001), a Plant Variety Protection Act ("PVPA") case, for the proposition that patent exhaustion in seeds, if applicable, must be limited to the seeds sold. In *J.E.M.*, in explaining the differences between seed variety protection under the PVPA and utility patents, the Court stated: "Most notably, there are *no exemptions for* research or *saving seed under a utility patent*." *Id.* at 143 (emphases added).

In *McFarling* and *Scruggs*, the court dealt with unauthorized planting of second-generation seeds. In *McFarling*, one of Monsanto's licensed growers, McFarling, violated the terms of his Technology Agreement by saving 1500 bushels of Roundup Ready® soybeans from his

harvest during one growing season, and replanting those seeds in the next season. 302 F.3d at 1293. McFarling repeated this activity, without paying any license fee in either year for the saved seed, which retained Monsanto's Roundup Ready® technology. *Id.* McFarling defended against Monsanto's patent infringement allegation on the ground that, *inter alia*, the conditions in the Technology Agreement "violate[d] the doctrine of patent exhaustion and first sale." *Id.* at 1298. This court held, based on *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700 (Fed. Cir. 1992), that the conditions in Monsanto's Technology Agreement were valid and legal and did not implicate the doctrine of patent exhaustion. *McFarling*, 302 F.3d at 1298-99. In any event, the court stated, "[t]he 'first sale' doctrine of patent exhaustion . . . [wa]s not implicated, as the new seeds grown from the original batch had never been sold. The price paid by the purchaser 'reflects only the value of the 'use' rights conferred by the patentee.'" *Id.* at 1299 (citing *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1426 (Fed. Cir. 1997)).

In *Scruggs*, Scruggs purchased Roundup Ready® soybean seeds from one of Monsanto's authorized seed companies and never executed the Technology Agreement. 459 F.3d at 1333. Scruggs planted the purchased seeds, harvested them, and replanted the second-generation seeds containing the Roundup Ready® trait. *Id.* Scruggs asserted the doctrine of patent exhaustion as one of many defenses, and the court held that it was inapplicable: "There was no unrestricted sale because the use of the seeds by seed growers was conditioned upon obtaining a license from Monsanto." *Id.* at 1334.

Thus, the doctrine of patent exhaustion did not bar the infringement claims in *McFarling* or *Scruggs*. Similarly, here, patent exhaustion does not bar an infringement action. Even if Monsanto's patent rights in the commodity seeds are exhausted, such a conclusion would be of no consequence because once a grower, like Bowman, plants the commodity seeds containing Monsanto's Roundup Ready® technology and the next generation of seed develops, the grower has created a newly infringing article. *See, e.g.*, '247E Patent, col.164 ll.15-29. "The fact that a patented technology can replicate itself does not give a purchaser the right to use replicated copies of the technology. Applying the first sale doctrine to subsequent generations of self-replicating technology would eviscerate the rights of the patent holder." *Scruggs*, 459 F.3d at 1336. The right to use "do[es] not include the right to construct an essentially new article on the template of the original, for the right to make the article remains with the patentee." *Jazz Photo Corp. v. Int'l Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001). The court disagrees with Bowman that a seed "substantially embodies" all later generation seeds, at least with respect to the commodity seeds, because nothing in the record indicates that the "only reasonable and intended use" of commodity seeds is for replanting them to create new seeds. *See Quanta*, 553 U.S. at 631. Indeed, there are various uses for commodity seeds, including use as feed. While farmers, like Bowman, may have the right to use commodity seeds as feed, or for any other conceivable use, they cannot "replicate" Monsanto's patented technology by planting it in the ground to create newly infringing genetic material, seeds, and plants. *See, e.g.*, '247E Patent, col.164 ll.15-29; col. 165 ll.18-20, 30-32, 45-48.

Appendix A

C. Notice Under 35 U.S.C. § 287(a)

1. Waiver

Bowman argues that Monsanto cannot recover pre-Complaint damages because it did not provide actual notice and did not mark or require growers to mark second-generation seeds in compliance with 35 U.S.C. § 287(a). Section 287(a) provides that a patent owner may recover damages for patent infringement only after providing actual notice to the accused infringer or constructive notice through marking the patented article or its package with the applicable patent number(s). 35 U.S.C. § 287(a); *Dunlap v. Schofield*, 152 U.S. 244, 247-48 (1894). Bowman argues that, although he did not expressly cite § 287(a) at the district court, Monsanto's failure to provide notice formed one of his primary arguments on summary judgment, and that he should be entitled to leniency as a *pro se* litigant.

Monsanto counters that Bowman waived this argument by failing to raise it at the district court. Monsanto argues that even if not waived, Monsanto complied with § 287(a) because Monsanto gave Bowman actual notice of infringement in a 1999 letter and again in the Technology Agreement, and alternatively put Bowman on constructive notice by marking and requiring all seed partners to mark first-generation seeds containing Monsanto's patented technology.

This court holds that Bowman did not waive his lack of notice argument under § 287(a) because he argued

before the district court that Monsanto failed to put any growers or grain elevators on notice of its patent rights with respect to commodity grain. For example, Bowman argued that "Monsanto did not take the necessary steps to keep their patented grain from being mixed with non-patented grain at the grain elevators." Def.'s Resp. to Pls.' Mot. Summ. J. at 2, *Bowman*, No. 07-cv-0283 (Nov. 18, 2008), ECF No. 73. He contended that "if Monsanto is going to complain about farmers using the age old practice of buying commodity grain for seed; they could have . . . had their Technology Agreements require farmers to sell their patented grain to pre-approved grain dealers who would keep Monsanto's patented traits separate . . . ." *Id.* at 3. While Bowman did not cite § 287(a) as the legal basis for this "lack of notice" contention, this court holds that, as a *pro se* litigant, he alleged facts and proffered argument sufficient to preserve the issue for appeal.

2. Actual Notice

Monsanto sent Bowman a letter on June 11, 1999, specifically notifying Bowman of its patents covering Roundup Ready® soybeans and informing Bowman that the "[p]lanting of seed that is covered by a patent would be making the patented invention and using the patented invention." Supp. Auth. of May 25, 2011. This letter was in the district court record attached to Bowman's memorandum in opposition to Monsanto's motion for summary judgment. *See Bowman*, No. 07-cv-0283 (Nov. 18, 2008), ECF No. 73-2. The letter (1) identified the allegedly infringing product (Roundup Ready® soybeans), (2) enclosed a Technology Agreement identifying the

patents covering the Roundup Ready® soybeans, (3) explained that Bowman would infringe the identified patents by planting any unlicensed Roundup Ready® seeds, and (4) informed Bowman that he could not pay a fee to save Roundup Ready® seeds, but may license seeds only through the purchase of new seeds subject to the Technology Agreement. *Id.* This letter is an "affirmative communication to the alleged infringer of a specific charge of infringement by a specific accused product or device," *Gart v. Logitech, Inc.*, 254 F.3d 1334, 1345 (Fed. Cir. 2001) (internal citation omitted), and it is "sufficiently specific to support an objective understanding that the recipient may be an infringer," *Funai Electric Co. v. Daewoo Electronics Corp.*, 616 F.3d 1357, 1373 (Fed. Cir. 2010).

The fact that this letter does not specifically mention commodity seeds is of no import because the specific accused products are not commodity seeds as a class, but rather Monsanto's Roundup Ready® seeds. Bowman planted Roundup Ready® seeds with actual notice that Monsanto considered this activity to infringe its patents. Because Bowman received actual notice under § 287(a) as of June 11, 1999, the court need not reach the issue of constructive notice through marking. Accordingly, Monsanto may recover damages under § 287.

III. Conclusion

For the foregoing reasons, this court affirms the district court's holding that patent exhaustion does not apply to Bowman's accused second-crop plantings.

Appendix A

AFFIRMED

COSTS

Each party shall bear its own costs.

APPENDIX B — ORDER OF THE UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRE HAUTE DIVISION, FILED JUNE 11, 2009

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
TERRE HAUTE DIVISION

2:07-cv-283-RLY-WGH

MONSANTO COMPANY,

Plaintiff,

vs.

VERNON HUGH BOWMAN,

Defendant.

ORDER REQUESTING FURTHER SUBMISSIONS ON SUMMARY JUDGMENT

This is a patent infringement case which is before the court on Plaintiff Monsanto Company's ("Monsanto") Motion for Summary Judgment. Defendant, Vernon Hugh Bowman, is a farmer who is defending the lawsuit without the benefit of an attorney. Patent law is a complicated area of the law and its application to agronomics often requires a significant level of technical sophistication. Nevertheless, there are not many disputed facts at issue here and Bowman has seized upon a recent Supreme Court decision and its potential application to the circumstances

of this case as a basis for denying summary judgment. Bowman's argument is not a frivolous one and has peaked the court's interest to the point that it will require additional argument and a supplemented record before it feels confident that it can reach a decision with respect to the pending summary judgment motion.

Factual Background

Monsanto invented and developed new crop biotechnology which allows the transfer of a gene into crop seed, such as soybeans, resulting in the treated seeds possessing a beneficial trait of resistance to certain herbicides. In this instance, the specific patented biotechnology at issue is Monsanto's "Roundup Ready®" genetic trait which allows a plant to express tolerance to glyphosate-based herbicides, including the Roundup herbicide which was also developed and patented by Monsanto. In simplistic terms, these technologies allow a farmer, who purchases Roundup Ready® soybean seeds, to plant his soybean crop and then treat his crop fields with Roundup herbicide, or, hypothetically, any other glyphosate-based herbicide, to control weed growth without fear that the herbicide will damage or kill the soybean crop. There appears to be no question that this biotechnology allows for a more bountiful harvest than could otherwise be expected.

The biotechnology that comprises the Roundup Ready® trait is protected by a number of U.S. patents, including two patents which Monsanto seeks to enforce in this matter, U.S. Patent No. 5,352,605 (the "'605

patent") and U.S. Patent No. RE 39,247E (the "'247 patent"). Monsanto licenses the use of its Roundup Ready® biotechnology to seed sellers who incorporate it into their particular germplasm's to produce a seed that is resistant to glyphosate-based herbicides, leaving the seed "Roundup Ready®." Those seeds are then purchased by farmers, each of whom must enter into a licensing agreement (sometimes referred to as a technology agreement) which limits the use of the seeds to a single season, commercial crop and forbids the saving or transfer of any of the purchased seeds or the saving of the resultant crop for purposes of replanting. The principle business reason for Monsanto to limit the use of the resultant crop is that the herbicide resistance trait is carried forward into each successive generation of soybeans produced from the genetically altered seeds. Purchase of these Roundup Ready® seeds would likely be curtailed significantly, if not made a one time occurrence, were a farmer able to save some of his crop to replant during the next growing season.

Bowman farms acreage in Knox County, Indiana, growing corn, wheat and soybeans. For the past several years, when he plants the first soybean crop of the season, Bowman purchases Pioneer brand seeds which contain the Roundup Ready® trait. Pioneer is a seed producer which has licensed the Roundup Ready® biotechnology from Monsanto. When it sells the seed to farmers, Pioneer requires the farmer to execute a limited license or "technology agreement" of the nature previously described, prohibiting the saving of the seed or its progeny crop. Bowman executed such an agreement in 2002, which states that the grower recognizes that the seeds contain

certain patented and protected matter which Pioneer owns or has licensed. The agreement states that it remains in effect perpetually until cancelled or replaced by another agreement. The 2002 Pioneer technology agreement is the only signed agreement of record in this case.

Bowman asserts that he has always complied with the restriction on saving any of the Roundup Ready® seed or its progeny with respect to his first crop of the season. After harvesting the first crop of beans for the season he takes the crop to a grain elevator where it is mixed in with the soybean crops of other farmers. However, until this lawsuit was filed, when Bowman would plant a second soybean crop for the year, a more risky proposition, since this second crop would be planted late in a limited growing season, he would buy what he refers to as "commodity beans" from a grain elevator, so as not to incur the expense of the considerably more expensive Roundup Ready® seeds from Pioneer or other seed producers. As the court understands, these commodity beans are simply a mixture of soybeans from a previous year's harvest which might include any number of sources, including farms which grew crops from Roundup Ready® seeds and those which did not.

Because of the popularity of the Roundup Ready® seeds with farmers in the area, Bowman anticipated that a large percentage of the commodity beans he bought might contain the Roundup Ready® trait. Accordingly, he treated his second soybean crop with a glyphosate-based herbicide. As it turns out, testing has shown Bowman was correct in anticipating that the vast majority of commodity beans he planted would be resistant to the herbicide as a

result of their containing the Roundup Ready® trait. Each year, beginning in 1999[1], Bowman would save seeds from his second crop to use with additional commodity beans for planting as the second crop the following year. He has always bought Roundup Ready seeds from Pioneer for his first crop and has never saved seed from that crop.[2]

When Monsanto discovered that Bowman was growing more soybeans which contained the Roundup Ready® trait than the quantity of his Roundup Ready® seed purchases could generate, it became suspicious of his activities. Monsanto contacted Bowman and accused him of saving seed. Bowman did not attempt to hide his planting activities and through numerous correspondence with various Monsanto representatives and attorneys, he explained what he was doing with regard to his second crop of soybeans and indicated his belief that this was not a violation of any of Monsanto's patent rights. Monsanto disagreed and eventually filed this lawsuit.

Often the first step in patent litigation, the claim construction stage, will be hotly contested. That is to say, a defendant may quarrel with the scope or metes and bounds of the patented invention. However, that is not the situation

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1. Bowman claims to have used "commodity beans" prior to 1999 when planting a risky crop, but 1999 is the year he began saving seeds from a second soybean crop which he knew had retained the Roundup Ready® trait.

2. During one year, Bowman did purchase a small amount of Roundup Ready® seed from another farmer at the market price, and asserts that this is a common practice between farmers when one has leftover seed which cannot be returned.

in this lawsuit. Bowman did initially pursue a two prong defense which included a contention that Monsanto's '605 patent was rejected or in the process of being reexamined by the patent office; however, in responding to Monsanto's summary judgment motion, Bowman has abandoned that unfounded defense. Bowman's defense is not based on the scope of Monsanto's patent claims; rather, he argues that Monsanto's failure to restrict the sale of first generation progeny soybeans legitimately grown by farmers under license from Monsanto, or other seed producers authorized to sell the Roundup Ready® seeds, has caused Monsanto's patents to be exhausted with respect to any subsequent use of those soybeans.

Monsanto has cited a number of recorded cases to the court in support of its contention that its patents have not been exhausted and that those patents apply to all soybeans containing the Roundup Ready® trait regardless of origin. Though none of the recorded cases cited by Monsanto stem from circumstances exactly like those involved in this case, the majority deal specifically with the patents at issue, are persuasive and, without consideration of the recent decision from the Supreme Court in *Quanta Computer, Inc. v. LG Electronics, Inc.*, __ U.S. __, 128 S.Ct. 2109 (2008), would provide support for a decision in Monsanto's favor. However, Bowman has posited an interesting argument based on *Quanta* and raised some deeper questions regarding Monsanto's ability to control the use of progeny Roundup Ready® soybeans after they have been harvested and sold.

Quanta is a case that dealt with method patents and

the application of the doctrine of patent exhaustion, which limits the patent rights which survive the initial sale of a patented item. *Id.* Its holding with respect to method patents being subject to the doctrine of patent exhaustion may not have direct application to the situation at hand, but the Supreme Court's discussion and reaffirmation of its analysis in a much earlier patent exhaustion case, *U.S. v. Univis Lens Co.*, 316 U.S. 241 (1942), begs the question of whether the doctrine might apply in a situation such as presents itself in this case. "The longstanding doctrine of patent exhaustion provides that the initial authorized sale of a patented item terminates all patent rights to that item." *Quanta*, 128 S. Ct. at 2115. Conditional sales or limited licenses may allow patent protection to survive, but an unconditional sale takes the article sold outside the protected monopoly which patent law provides to registered patentees. *Id.* at 16.

In *Univis*, the patents at issue were for eyeglass lens which were made up of fused segments utilized to create bi- and tri-focal lenses. *Univis*, 316 U.S. at 244. Univis would license wholesalers and retailers to finish, mount and sell the lenses to consumers as prescription eyeglasses at prices dictated by Univis. *Id.* The United States sued Univis alleging unlawful restraint on trade and Univis defended based upon the authorized monopoly provided by their patents. *Id.* at 248-49. The Supreme Court held that when the Univis Lens Company or its licensee sold an unfinished lens blank to a finisher it relinquished its patent rights under the doctrine of patent exhaustion. *Id.* at 248-49. The Supreme Court concluded:

> We think that all the considerations which support these results lead to the conclusion that where one has sold an uncompleted article which, because it embodies essential features of his patented invention, is within the protection of his patent, and has destined the article to be finished by the purchaser in conformity to the patent, he has sold his invention so far as it is or may be embodied in that particular article. The reward he has demanded and received is for the article and the invention which it embodies and which his vendee is to practice upon it. He has thus parted with his right to assert the patent monopoly with respect to it and is no longer free to control the price at which it may be sold either in its unfinished or finished form. No one would doubt that if the patentee's licensee had sold the blanks to a wholesaler or finishing retailer, without more, the purchaser would not infringe by grinding and selling them.

Id. at 250-51.

In *Quanta*, the Supreme Court relied heavily on its analysis in *Univis* to support its conclusion that the authorized sale of a patented article which, practically speaking, is capable of use only in practicing the patent, is a relinquishment of the authorized patent monopoly. *Quanta*, 128 S. Ct. at 2119. The court understands Bowman's argument to be that, Monsanto's claims are similar to those of Univis Lens Company in *Univis* or LG Electronics in *Quanta* because Monsanto has placed no

pertinent restriction on the sale of the soybeans harvested from crops grown from first generation seed sold by licensed seed producers, yet it claims some continued patent rights in those second generation beans/seeds. In its reply brief, Monsanto argues that the unrestricted sale must be by the patent holder and it has not engaged in an unrestricted sale of its Roundup Ready® seeds. Further it contends that the case of *Monsanto v. Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006) stands for the proposition that the protections of its '605 patent are not exhausted as applied to second generation seeds. However, the language of both *Univis* and *Quanta* seems to clearly state that the sale must only be "authorized," and a licensee can be authorized to make a sale. Further, the circumstances in *Scruggs* are not identical to the situation here and that case was decided before the Supreme Court decided *Quanta* by dusting off its analysis in *Univis*.

That is not to say that this court is convinced that these two Supreme Court decisions require a denial of the summary judgment motion filed by Monsanto. It is not convinced, and it finds both the record and the level of attention paid by the parties in their briefs to analyzing exactly how the doctrine of patent exhaustion and the Supreme Court analysis in *Quanta* and *Invis* should apply to these specific facts insufficient at this point.[3] More

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3. Monsanto has submitted as additional authority a recent judgment issued by the United States District Court for the District of South Carolina. The case involves Monsanto's Roundup Ready® soybeans and a farmer who used "saved seed" which came in "brown bags." The South Carolina court found in favor of Monsanto, and while this court assumes that Monsanto

specifically, the record is incomplete insofar as it lacks copies of pertinent agreements. There is no copy of any signed agreement between Monsanto and Bowman, and Bowman claims none exists. Nor is there a copy of the agreement between Monsanto and Pioneer. Monsanto has simply copied its unsigned form technology agreements for growers for each pertinent year and attached them

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is comparing the "brown bag" soybean seed to the "commodity seed" which Bowman used to plant his second crop, without more knowledge and context it cannot be certain of how Monsanto wants the court to interpret that South Carolina decision.

This court has not been favored with any innate understanding of all common terms and practices used in farming, and at times it seems that the litigants assume the court has the wealth of relevant agricultural knowledge and experience that they possess. In this case there are a number of questions the court has which remain unanswered, such as:

> Is "commodity seed" the same as "brown bag seed?"
> How common is the practice of planting commodity seed?
> Does Monsanto maintain that anyone who plants "commodity seed" which contains beans/seeds with the Roundup Ready® trait violates its patents and, if so, from a practical standpoint, doesn' t that eliminate commodity seed planting as an option for farmers?
> If Monsanto can legally restrict "seed saving," which the case law certainly suggests it can, does Bowman contend that the sale of harvested beans eliminates those beans from being considered as "saved?" If so, does he contend that he could simply take his Roundup Ready® crop to a grain elevator, sell it, and then buy some of it right back that same day without violating the Monsanto patents?

to its motion. The value of these unsigned agreements is unclear to the court. Further, while Monsanto may rely on the growers technology agreement between Pioneer and Bowman for purposes of establishing that Bowman should have known that the Roundup Ready® trait was protected by patent, the *Quanta* decision tells us that the license agreement between Monsanto and Pioneer may be an important agreement, depending on the restrictions placed upon Pioneer as an authorized seed producer and seller. *See Quanta*, 128 S. Ct. at 2121-22. Indeed, the conditions Monsanto placed on Pioneer with respect to seed production, sale and restriction of the progeny's use would be relevant to both the first sale exhaustion issue and the scope and validity of any restrictions Pioneer placed on growers who purchase its Roundup Ready® seeds.

At this point, the court will hold its ruling on the pending summary judgment motion (Docket # 62) in abeyance until such time as each side has had an opportunity to supplement the record and their argument with respect to the applicability of the doctrine of patent exhaustion to the specific facts of this case. As with any other pro se litigant, Defendant Bowman is encouraged to seek legal counsel if at all possible to assist him as this case proceeds.

Plaintiff and Defendant shall each have 30 days from the entry of this order to supplement the record through the filing of a brief (of no more than twenty pages in length) and any exhibits necessary to address the issues and concerns expressed by the court in this order.

SO ORDERED this 11th day of June 2009.

/s/
RICHARD L. YOUNG, JUDGE
United States District Court
Southern District of Indiana

APPENDIX C — ENTRY ON PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT OF THE UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRE HAUTE DIVISION, FILED SEPTEMBER 30, 2009

UNITED STATES DISTRICT COURT SOUTHERN DISTRICT OF INDIANA TERRE HAUTE DIVISION

2:07-cv-283- RLY-WGH

MONSANTO COMPANY,

Plaintiff,

vs.

VERNON HUGH BOWMAN,

Defendant.

ENTRY ON PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT

This patent infringement case is before the court on Monsanto Company's ("Monsanto") Motion for Summary Judgment. The court identified the legal issue in dispute and set forth the factual background in this court's Order of June 11, 2009 (Docket #93), wherein the parties were asked to supplement the record and provide additional briefing to assist the court in determining the applicability of the doctrine of patent exhaustion to the circumstances

of this case. The additional briefing has, indeed, assisted the court in its analysis of the legal issues and furthered its understanding of some of the terminology pertinent to some agronomic/agricultural processes which are relevant to this case. For the sake of efficiency, the court incorporates by reference the entire factual background as set forth in its June 11, 2009 Order and will limit its effort to recite the facts here to a brief summary of events sufficient to set the table for a resolution of the key legal issue, the applicability of the doctrine of patent exhaustion.

Defendant, Vernon Bowman ("Bowman"), admits that in the past he purchased commodity soybean seeds[1] from a grain elevator for the purpose of planting and harvesting a second season crop. He also admits that the majority of the commodity soybeans he purchased contained, by

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1. The soybean plant is a legume. The fruit of a soy bean plant are the pods, which contain two to four seeds that are rich in proteins. It is common for these seeds to be referred to as beans. In 1995, Monsanto introduced the genetically modified Roundup Ready® soybeans, which are resistant to Roundup, a commonly applied herbicide manufactured by Monsanto. In 1997, approximately 8% of soybeans cultivated for the commercial market in the United States were genetically modified. By the year 2006, that figure was 89%. *See* Wikipedia.org/wiki/Soy_bean.

In the United States, after harvest, the beans/seeds are often sold to grain elevators/dealers. Bowman refers to the beans/seeds as "grain" when they are purchased from a grain dealer. Such a reference to beans/seeds held by a grain dealer as grain, may well be a common reference in agricultural vernacular; however, regardless of which of these terms is used by the court to describe the useful protein product from the soybean plant, it intends no distinction unless specifically explained.

happenstance or otherwise, the "Roundup Ready®" trait patented by Monsanto. Roundup Ready® soybeans are genetically modified soy beans. The genetic modification was developed and patented by Monsanto and carries forward into each successive crop of soybeans. Monsanto restricts the sale of seeds containing its patented trait to those farmers who agree to be licensed to a single use of the seed or its progeny for planting. However, the soybeans produced from a licensed crop are then often sold by the farmer to a grain elevator, which may or may not segregate the soybeans as "carriers" of the patented trait. The license under which a farmer is authorized to produce this single crop does not restrict his sale of that crop to a grain elevator, but does state that the farmer agrees "not to save any crop produced from this seed for replanting, or supply saved seed to anyone for replanting."

After harvesting the crop he produced from the commodity soybeans, Bowman saved some of the crop for use in the next year's second season planting and, supplemented by additional purchases of commodity soybeans (the majority of which also contained the Roundup Ready® trait), continued that process annually until this lawsuit was filed by Monsanto in an effort to stop this practice by Bowman. Bowman has also planted his first season crops with Roundup Ready® soybeans pursuant to a license, but claims he has never saved seed from such a planting. Monsanto claims that Bowman has infringed on its patent through the unauthorized planting of the commodity soybeans which contain the Roundup Ready® trait and via each successive crop planted with saved seed and commodity soybeans.

Appendix C

In defense, Bowman claims that when the soybeans from a licensed Roundup Ready® crop are harvested and sold to a grain elevator or dealer, they are sold without restriction, mixed with all other soybean crops in from the area and, therefore, when purchased and used by farmers to plant as seed (commodity soybeans) for another crop, they are not protected by patent. Bowman has primarily argued that the doctrine of patent exhaustion applies to strip such commodity soybeans from any patent restrictions, but in this latest round of briefing he has also questioned the constitutionality of Monsanto being allowed to claim a patent violation against anyone planting a soybean/seed with the Roundup Ready® trait, regardless of how that bean/seed came in to their possession. In fact, Bowman has invited the court to go so far as to find that by granting Monsanto a utility patent for its alteration of a seed producing plant, the United States Patent and Trademark Office has acted in violation of the Constitution. Unfortunately for Bowman, aside from the broad statement that such patent protection unduly infringes the rights of farmers and is unconstitutional, he has not developed a cogent argument with respec t to the specific constitutional rights he contends have been violated.

Nevertheless, what is compelling about Bowman's argument, and the reason why the court sought further briefing, is the effect, intended or unintended by Monsanto, that Monsanto's claim to patent protection for all soybeans that carry the Roundup Ready® trait has had on the ability of farmers to use commodity beans/seed to plant in lieu of buying beans/seed from Monsanto or

another seed producer. As Bowman points out, Monsanto's domination of the soybean seed market, combined with the regeneration of the Roundup Ready® trait and the lack of any restriction against the mixing of soybeans harvested from a Roundup Ready® crop from those that are harvested from a crop that was not grown from Roundup Ready® seed, has resulted in the commodity soybeans sold by grain dealers necessarily carrying the patented trait, thereby eliminating commodity soybeans as a low cost (but higher risk) source for planting.

Monsanto, on the other hand, has a compelling argument of its own. It has expended great effort and much money to develop a type of soybean which can be grown efficiently without weed problems, because the planted crop can be treated with a herbicide containing glyphosate. While this type of genetic modification to the soybean plant may be controversial in other parts of the world, its widespread use in the United States indicates that it has been readily accepted here. Unless Monsanto receives the paten t protection it is trying to enforce in this case , because the trait carries forward to each successive crop, there would be nothing stopping all farmers from buying commodity soybeans for planting from this point forward, thereby allowing such farmers to receive the benefit of the Roundup Ready® genetic modification without compensating Monsanto for its research an d development work. In essence, Monsanto's argument is that the glyphosate resistant trait is a technology that Monsanto owns and licenses. Although the beans produced as a result of planting Roundup Ready® seeds belong to the farmer, the technology contained in the progeny still

belongs to Monsanto and, without authorization, may not be duplicated through a planting of that progeny. In short, the progeny soybeans can be sold for any use *other than planting*, regard less of who is in possession.

As a counterpoint to Monsanto's own equitable assertion stands Bowman's contention that Monsanto could use its "Terminator gene" to assure that the progeny of Roundup Ready® seeds do not contain the trait and thereby protect its interest in selling additional soybean seed. However, there is no admissible evidence in the record with regard to the existence of such a gene or its application in these circumstances. More importantly, the court is not the appropriate venue for raising a policy argument with respect to conditions which should be placed upon an award of a utility patent for genetically altered seed.

Another policy argument raised by Bowman is that Monsanto should be required to include with its license to plant Roundup Ready® seed, a requirement that the resulting crop be segregated from non-Roundup Ready® crops going forward, so that commodity soybean planting is not eliminated as an option for farmers. This later argument dovetails with Bowman's claim that the doctrine of patent exhaustion applies in this case because of the lack of a soybean crop segregation or similar restriction.[2]

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2. In a policy related argument, Bowman also spends time in his supplemental submission opining as to whether Roundup Ready® soybeans are actually soybeans or, rather, a new variety of plant, which should be sold or traded within it own separate categorization. Resolution of such an issue is beyond the realm of this court.

In the end, despite Bowman's compelling policy arguments addressing the monopolizing effect of the introduction of patented genetic modifications to seed producing plants on an entire crop species, he has not overcome the patent law precedent which breaks in favor of Monsanto with regard to its right to patent protection against the use of the progeny of its patented Roundup Ready® seeds. Said another way, the court may disagree with the decision to award unconditional patent protection to Monsanto for its genetically altered soybeans and their progeny, but this court does not make policy; rather, it interprets and enforces the law, which, in this case, does not support Bowman.

The essence of Bowman's argument with regard to patent exhaustion is that the relatively recent Supreme Court's decision in *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S.__, 128 S.Ct. 2109 (2008) lends support to his contention that when a duly licensed farmer sells his crop of soybeans produced from Roundup Ready® seeds, it is an authorized unconditional sale of the patented technology and, therefore, the patent is exhausted as to those soybeans. This court is not the first to hear a farmer rely on *Quanta* as a basis for finding that the sale of Roundup Ready® seed, unaccompanied by any restriction on its further use, exhausts Monsanto's patent.

In *Monsanto Co. v. Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006), the Federal Circuit ruled that the patent exhaustion doctrine did not apply to a farmer who had purchased Roundup Ready® seed for planting from an authorized distributor and saved seed from the progeny for purposes of successive year planting. The farming group involved

had purchased Roundup Ready® seed from a Monsanto authorized distributor without signing or agreeing to any accompanying license or restriction. They argued that without a licensing restriction, their use of those seeds or the progeny was unencumbered. *Id.* at 1335-36. The Federal Circuit, however, was not persuaded.

> Scruggs argues that it purchased the Monsanto seeds in an unrestricted sale, and that it was therefore entitled to use those seeds in an unencumbered fashion under the doctrine of patent exhaustion. The first sale/patent exhaustion doctrine establishes that the unrestricted first sale by a patentee of his patented article exhausts his patent rights in the article. *See Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 701 (Fed.Cir. 1992); *see also LG Elecs., Inc. v. Bizcom Elecs., Inc.*, 453 F.3d 1364 (Fed.Cir. 2006). The doctrine of patent exhaustion is inapplicable in this case. There was no unrestricted sale because the use of the seeds by seed growers was conditioned on obtaining a license from Monsanto. Furthermore, the "'first sale' doctrine of exhaustion of the patent right is not implicated, as the new seeds grown from the original batch had never been sold." *See Monsanto v. McFarling*, 302 F.3d 1291, 1299 (Fed.Cir. 2002). Without the actual sale of the second generation seed to Scruggs, there can be no patent exhaustion. The fact that a patented technology can replicate itself does not give a purchaser the right to use replicated copies of the technology. Applying the first sale doctrine

> to subsequent generations of self-replicating technology would eviscerate the rights of the patent holder.

Id.

After the Supreme Court denied certiorari, *Scruggs v. Monsanto Co.*, 549 U.S. 1342 (2007), the case went back to the district court for further proceedings. While the *Scruggs* case was still with the district court, the Supreme Court rendered its decision in *Quanta*. Citing *Quanta* as support, Scruggs sought to revitalize its exhaustion defense to Monsanto's claim of patent infringement. The district court rejected that effort and, on Petition for Permission to Appeal pursuant to 28 U.S.C. § 1292(b), the Federal Circuit recently denied an interlocutory appeal of that decision. 2009 WL 1228318 (May 4, 2009 Fed. Cir.).

Bowman argues that unlike *Scruggs*, where the farmer saved seed from the first crop grown from the Roundup Ready® seeds purchased from an authorized distributor, Bowman did not save seed from his first season crops (which were grown from first generation Roundup Ready® seeds purchased by Bowman from a licensed distributor, Pioneer). Rather, he planted progeny soybeans contained in commodity soybeans which had been sold to grain dealers without restriction. While this may appear at first blush to be a distinction that makes a difference, it does not under established patent law. Even before the *Scruggs* litigation, the Federal Circuit stated, in a case with a similar challenge to Monsanto's patent protection against replanting saved seeds, that:

> [t]he "first sale" doctrine of exhaustion of the patent right is not implicated, as the new seeds grown from the original batch had never been sold. The price paid by the purchaser "reflects only the value of the 'use' rights conferred by the patentee." *B. Braun Medical Inc. v. Abbott Labs.*, 124 F.3d 1419, 1426, 43 USPQ2d 1896, 1901 (Fed.Cir.1997). The original sale of the seeds did not confer a license to construct new seeds, and since the new seeds were not sold by the patentee they entailed no principle of patent exhaustion.

Monsanto Co. v. McFarling, 302 F.3d 1291, 1299 (Fed. Cir. 2002). The fact that Monsanto had not sold the progeny seeds was relied on by the Federal Circuit to eliminate a defense based upon patent exhaustion.

Another reason why the *McFarling* case is persuasive in these circumstances is the Federal Circuit's rejection of the farmer's reliance on *United States v. Univis Lens Co.*, 316 U.S. 241 (1942) as support for the application of the doctrine of patent exhaustion. As we detailed in our Order of June 11, 2009, the Supreme Court turned to its analysis in the *Univis* decision to assist it in reaching its conclusion in the *Quanta* case.

Quanta involved the application of the doctrine of patent exhaustion to a method patent where the item which embodied the method was sold with implied authorization from the patent holder. *Quanta*, 128 S.Ct. at 2110-11. *Univis* involved patented eyeglass lens blanks, which

the patentee had sold to lens makers, but still sought to control the resale price. *Univis*, 316 U.S. at 247-48. In both cases, the patent exhaustion doctrine was found to apply because the patent holder had licensed the article at issue to another entity without sufficient conditions to protect its patent rights. The distinction found by the Federal Circuit in *McFarling*, and which exists here as well, is that the Monsanto licenses (and the agreements its licensees required from farmers) for Roundup Ready® soybeans specifically excluded saving seed or otherwise providing anyone progeny soybeans for purposes of planting. *McFarling*, 459 F.3d at 1335-36. No unconditional sale of the Roundup Ready® trait occurred because the farmers could not convey to the grain dealers what they did not possess themselves. *Id.* at 1336. It is no different in the case at bar. The grain elevator/dealer from whom Bowman bought the soybeans had no right to plant the soybeans and could not confer such a right on Bowman. Consequently, Bowman has infringed on Monsanto's patent rights by planting the commodity soybeans, which contained the patented trait, and then applying a glyphosate-based herbicide to that planted crop.

That brings the court to the question of damages. In its motion, Monsanto seeks compensatory damages, enhanced damages, attorney fees and interest, as well as a permanent injunction enjoining Bowman from using or selling its patented crop technologies. However, this is neither an exceptional nor an egregious case; therefore, the court will not award enhanced damages, attorneys fees or prejudgment interest. Bowman never attempted to hide what he was doing and, in good faith, he believed

that his actions did not violate the patents at issue. As difficult as it has proven for the court to discount a very compelling argument on the exhaustion of Monsanto's patent rights, it was certainly within reason for Bowman to reach a conclusion that what he was doing was within legal bounds.

What remains then is for the court to determine the compensatory damages and the availability of permanent injunctive relief. Monsanto is entitled to a reasonable royalty for the unlicensed use of its technology. 35 U.S.C. § 284. Monsanto has provided an expert assessment of, and testimony with respect to, an amount of damages it is entitled to receive for the second season crops planted by Bowman for which he used, without license, soybeans which carried the Roundup Ready® trait from 2002 through 2006. Monsanto has offered evidence that the analysis used by their experts to calculate a reasonable royalty is accepted by their peers in the industry and an examination by the court has discovered no basis to question the methodology used. More importantly, Bowman has not contested the method of damage calculation or offered an alternative measure. The expert report submitted by Monsanto calculates the upper bounds of an estimated royalty for the applicable years to be $30,873.80. The report goes on to suggest that because Monsanto faces constant risk of unauthorized use and must engage in such activities as crop monitoring in order to enforce its patents, the costs of such compliance monitoring and other risk related costs should be added to the $30,873.80 figure. Under the circumstances of this case, the court does not find that any additional amount should be added to the statutorily

mandated reasonable royalty, which was appropriately calculated on a hypothetical basis by Monsanto's experts.

Finally, there is the issue of injunctive relief to which Monsanto is entitled. As a part of the final judgment that shall issue separately, the court will enjoin Defendant, Vernon Hugh Bowman, permanently, from making, using, selling or offering to sell any of Monsanto's patented crop technologies.

CONCLUSION

Based upon the facts and analysis contained in the court's prior Order of June 11, 2009 (Docket #93) and the explication contained within this entry, Monsanto's Motion for Summary Judgment (Docket #62) is **GRANTED** and judgment shall be entered in favor of Monsanto and against Vernon Hugh Bowman in the amount of $30,873.80, plus costs and interest from the date of judgment.

SO ORDERED this 30th day of September 2009.

/s/
RICHARD L. YOUNG, JUDGE
United States District Court
Southern District of Indiana

APPENDIX D — FINAL JUDGMENT OF THE UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRE HAUTE DIVISION, FILED SEPTEMBER 30, 2009

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
TERRE HAUTE DIVISION

2:07-cv-0283-RLY-WGH

MONSANTO COMPANY,

Plaintiff,

vs.

VERNON HUGH BOWMAN,

Defendant.

FINAL JUDGMENT

Comes now the court, having this day granted Plaintiff's Motion for Summary Judgment, and enters final judgment in its favor, and against the Defendant herein, Vernon Hugh Bowman. Judgment shall be entered in favor of Monsanto and against Vernon Hugh Bowman in the amount of $30,873.80, plus costs and interest from the date of this judgment.

Appendix D

SO ORDERED this 30th day of September 2009.

/s/
RICHARD L. YOUNG, JUDGE
United States District Court
Southern District of Indiana

Laura Briggs, Clerk
United States District Court
/s/
By: Deputy Clerk

APPENDIX E — ORDER OF THE UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRE HAUTE DIVISION, FILED MAY 12, 2010

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
TERRE HAUTE DIVISION

2:07-cv-283-RLY-WGH

MONSANTO COMPANY,

Plaintiff,

vs.

VERNON HUGH BOWMAN,

Defendant.

ORDER GRANTING PLAINTIFF'S RULE 59 MOTION AND DENYING DEFENDANT'S RULE 60 MOTION

On September 30, 2009, this court granted Monsanto Company's summary judgment motion and entered final judgment in favor of Monsanto, awarding it damages of $30,873.30. On October 14, 2009, Monsanto filed a motion under Fed. R. Civ. P. 59(e), asking the court to amend the final judgment to reflect damages of $84,456.20. On December 15, 2009, Defendant, Vernon Hugh Bowman, who is proceeding *pro se* and has represented himself throughout most of the litigation, filed a motion seeking relief from judgment pursuant to Fed. R. Civ. P. 60(b). For the reasons explicated in this order, the court will grant Monsanto's motion and deny Bowman's motion.

Appendix E

Monsanto's Rule 59(e) Motion

To prevail on a Rule 59(e) motion, the movant must present newly discovered evidence that was unavailable at the time of trial or provide evidence from the record that clearly establishes a manifest error of law or fact. *Oto v. Metropolitan Life Ins. Co.*, 224 F.3d 601, 606 (7th Cir. 2000). In this case, Monsanto argues that the court has made a manifest error in misinterpreting its expert's report on damages. It contends that the damages the court awarded are not consistent with its expert's conclusions and is also less than the $36,138 which Bowman would have had to pay had he purchased and planted Monsanto's patented seeds. Monsanto maintains that a damage award for patent infringement would serve no deterrent purpose if it were for less than the cost of the readily available use license.

The court agrees that the reasonable royalty awarded to Monsanto for an infringing farmer's unlicensed use of its patented seeds must be greater than the cost of the license or "technology fees" that a farmer pays if he seeks to plant Monsanto's patented seeds, otherwise an incentive is created for other farmers to follow in the infringing farmer's footsteps. *Monsanto Co. v. David*, 516 F.3d 1009, 1018 (Fed. Cir. 2008); *Monsanto Co. v. Tidball* 2009 WL 2757047 (E.D. Mo. August 26, 2009). When this court first examined the expert report submitted by Monsanto, it had not attempted to calculate what it would have cost Bowman to purchase licensed seed and assumed that Monsanto's expert's calculation of a reasonable royalty, without additions for compliance monitoring, field testing and the like (see page 13 of expert report), was an amount greater than what the costs of licensed seeds would have

been. Monsanto has demonstrated that this was not the case, and that the $30,873.80 figure was only a reasonable royalty implied if it were unnecessary to build into the damages award (as it does its technology fees) the costs associated with protecting the patent.

In its September 30, 2009, entry granting Monsanto's Motion for Summary Judgment, this court incorrectly discounted the "Additional Considerations" portion of the expert report as an enhancement of the reasonable royalty for Bowman's infringing conduct as opposed to a critical component thereof. Because Bowman offered no alternative damages calculation, the only damages calculation supported by the evidence is that which was contained in the report prepared by Monsanto's expert, Timothy Taylor, Ph.D.; and, because the additional considerations identified by Taylor were not merely enhancements, his calculations, which included those additional considerations, must be credited. Accordingly, Monsanto is entitled to an award of damages in the amount of $84,456.20, and the final judgment will be amended to reflect the same.

Bowman's Rule 60 Motion

Outside of correcting a clerical mistake, a party may obtain relief from a final judgment under Rule 60 for the following reasons:

(1) mistake, inadvertence, surprise, or excusable neglect;

(2) newly discovered evidence that, with reasonable diligence, could not have been discovered in time to move for a new trial under Rule 59(b);

(3) fraud (whether previously called intrinsic or extrinsic), misrepresentation, or misconduct by an opposing party;

(4) the judgment is void;

(5) the judgment has been satisfied, released or discharged; it is based on an earlier judgment that has been reversed or vacated; or applying it prospectively is no longer equitable; or

(6) any other reason that justifies relief.

Fed. R. Civ. P. 60(b).

Bowman asserts three of these reasons in advancing his Rule 60 Motion for Relief From Judgment. He first claims that due to inadvertence, mistake or excusable neglect he did not contest Monsanto's "damage claim involving no-till practices." He goes on to assert that Monsanto engaged in fraud or misrepresentation by submitting its damage calculations for no-till, "when anyone familiar with second crop plantings understood that no-till was the accepted practice." And, finally, he simply contends that the court's determination that he violated Monsanto's patent rights was wrong.

Bowman's failure to understand Monsanto's damages argument and his failure to challenge the same until after

Monsanto filed its Rule 59 motion is not the type of mistake or excusable neglect upon which he can base a successful Rule 60 motion. Rule 60 does not authorize relief from the consequences of negligence or carelessness, but requires some justification for the error. *Lomas and Nettleton Co. v. Wiseley*, 884 F.2d 965, 967 (7th Cir. 1989). Bowman does not offer a justification for his earlier inability to understand Monsanto's damages argument, and though he may not have fully understood the argument, he did make counter-assertions (though not properly supported by evidence of record) regarding several of the expert's assertions. The challenges he raises now to Dr. Taylor's expert report, if supported by admissible evidence, could have been raised at the time of the summary judgment briefing.

Moving to his second basis for relief, Bowman does not clearly detail what it is that he claims was fraudulent conduct on the part of Monsanto. He seems to suggest that Monsanto's submission of a calculation of damages based upon no-till planting procedures is somehow fraudulent. The assertion of a legal position or argument is not fraudulent conduct. *Roger Edwards, LLC v. Fiddes & Son Ltd.*, 427 F.3d 129, 137 (1st Cir. 2005). Only where the moving party shows by clear and convincing evidence that he was somehow fraudulently prevented from presenting the merits of his case is relief appropriate under Rule 60 (b)(3). *Ervin v. Wilkinson*, 701 F.2d 59, 61 (7th Cir. 1983). That is not the situation here, as nothing prevented Bowman from advancing the merits of his defenses.

As for Bowman's contention that the court wrongly decided that the patent exhaustion doctrine did not apply in

this situation and that it further erred in finding him liable for a breach of Monsanto's patent, those are arguments to raise in an appeal. The court previously considered and rejected Bowman's arguments against a finding of liability, granting Monsanto summary judgment. A Rule 60 motion is not a substitute for a substantive appeal. *Stoller v. Pure Fishing Inc.*, 528 F.3d 478, 480 (7th Cir. 2008); *Schonback v. U.S.*, 983 F.2d 1073 (7th Cir. 1993). In briefing his Rule 60 motion, Bowman simply rehashes much of what he argued at the summary judgment stage. If this court wrongly decided the issue, the Court of Appeals will correct it, but for now the earlier determination in favor of Monsanto is final in this court.

Conclusion

For the foregoing reasons, Plaintiff's Rule 59 Motion to Alter or Amend (Docket # 106) is **GRANTED** and Defendant's Motion For Relief From Judgment (Docket # 126) is **DENIED**. A separate Amended Final Judgment shall issue increasing the damages awarded to Plaintiff to $84,456.20. That judgment should also set forth the injunctive relief previously provided by the court in its September 30, 2009, entry.

SO ORDERED this 12th day of May 2010.

/s/_____

RICHARD L. YOUNG, CHIEF JUDGE
United States District Court
Southern District of Indiana

APPENDIX F — AMENDED FINAL JUDGMENT OF THE UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRE HAUTE DIVISION, FILED MAY 12, 2010

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
TERRE HAUTEDIVISION

2:07-cv-283-RLY-WGH

MONSANTO COMPANY,

Plaintiff,

vs.

VERNON HUGH BOWMAN,

Defendant.

AMENDED FINAL JUDGMENT

Comes now the court, having this day granted Plaintiff's Rule 59 Motion to Amend or Alter Judgment, and enters this Amended Final Judgment in favor of Plaintiff, Monsanto Company, and against Vernon Hugh Bowman in the amount of $84,456.30, plus costs and interest from the date of this Amended Final Judgment. In addition, Vernon Hugh Bowman is hereby permanently enjoined from making, using, selling or offering to sell any of Monsanto's patented crop technologies.

SO ORDERED this 12th day of May 2010.

/s/
RICHARD L. YOUNG, CHIEF JUDGE
United States District Court
Southern District of Indiana

Laura Briggs, Clerk
United States District Court

By: Deputy Clerk

APPENDIX G — ORDER DENYING RULE 59(E) MOTION OF THE UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, FILED OCTOBER 29, 2010

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA

NO. 2:07-cv-0283-RLY-WGH

MONSANTO COMPANY,
MONSANTO TECHNOLOGY LLC,

Plaintiffs,

vs.

VERNON HUGH BOWMAN,

Defendant.

ENTRY

The Court of Appeals has explained that there are only three valid grounds for a Rule 59(e) motion--newly-discovered evidence, an intervening change in the law, and manifest error in law. *See Cosgrove v. Bartolotta,* 150 F.3d 729, 732 (7th Cir. 1998). The defendant's motion to alter or amend the court's order of May 12, 2010, presents arguments which were or could have been made previously. It does not do so in any fashion persuading the court that a manifest error of law has occurred, that the motion rests on newly discovered evidence, or that

the motion rests on a change in the law. Accordingly, the motion (dkt 133) is **denied**.

IT IS SO ORDERED.

Date: 10/29/2010

/s/_____
RICHARD L. YOUNG, CHIEF JUDGE
United States District Court
Southern District of Indiana

OPPOSITION BRIEF

No. 11-796

IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, ET AL.,

Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF IN OPPOSITION

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QUESTIONS PRESENTED

Whether the Federal Circuit correctly ruled that Monsanto's patent rights in biotechnology related to genetically modified plants (here, patented technologies that make soybeans resistant to glyphosate-based herbicides) are independently applicable to each generation of soybeans embodying the invention, such that a grower who, without authorization from Monsanto, creates a new generation of genetically modified soybeans infringes Monsanto's patents.

RULE 29.6 STATEMENT

Respondent Monsanto Company is a publicly held corporation; no publicly held company owns 10% or more of its stock. Respondent Monsanto Technology LLC is a wholly owned subsidiary of Monsanto Company.

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IN THE

Supreme Court of the United States

No. 11-796

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, ET AL.,

Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF IN OPPOSITION

STATEMENT

1. Monsanto develops, manufactures, licenses, and sells agricultural biotechnology and agricultural chemicals. One of the most popular product classes that Monsanto manufactures is the Roundup® family of herbicides. The active ingredient in Roundup®, glyphosate, is highly effective in eliminating weeds.

Because glyphosate is non-selective, it can damage not just weeds but also other plants, including crops, that are not resistant to it. After the investment of substantial time, expense, and expertise, Monsanto developed revolutionary biotechnology that protects crops from glyphosate. This technology involves the insertion

of a novel gene into crop seed, such as soybeans. The resulting engineered seed and the crop plant grown from it are resistant to glyphosate. A grower who plants a herbicide-resistant crop containing Monsanto's biotechnology can spray glyphosate over the top of his entire field, and thereby kill the weeds without harming crops. *See* Pet. App. 3a-5a, 20a. This method of farming affords growers considerable savings in labor and expense, increases yields, and reduces soil erosion by eliminating the need for tilling fields.

Monsanto's biotechnology is protected by U.S. Patent Nos. 5,352,605 and RE39,247E. Seed containing that patented technology is marketed as Roundup Ready® seed. Monsanto strictly limits the distribution of Roundup Ready® seed for planting to authorized channels. The only way that a grower may obtain Roundup Ready® seed for planting is to purchase that seed from an authorized seed dealer. A grower will not be authorized to plant Roundup Ready® seed unless he executes an approved Technology Agreement and obtains a limited-use license from Monsanto.

That license grants the grower the right to use the patented biotechnology in Roundup Ready® seed only to plant a single commercial crop. The license explicitly prohibits a purchaser of Roundup Ready® seed from saving his harvested crop and replanting seed from that crop (which also contains the patented biotechnology) to create another generation of crops. A grower who plants Roundup Ready® seed may sell the harvested crop through customary distribution channels as a commodity, or for use as animal feed. But a grower is never authorized by Monsanto to sell his crop to another party, such as another grower, for the purpose of replanting that crop and creating more generations of crops.

These restrictions on the use of subsequent generations of the seed for planting are necessary because Roundup Ready® technology is self-replicating. Therefore, the progeny of the plants grown with the modified genes will also contain the genetic trait that makes them resistant to glyphosate. Soybeans present a particular concern because they self-replicate at an exponential rate, and because the harvested commodity is essentially identical to the planted seed. The harvested commodity seed can be easily replanted without the need for expensive seed cleaning and treatment.

Monsanto's license restrictions on planting second- and subsequent-generation seed containing the patented biotechnology are fundamental to its business. Without reasonable license restrictions prohibiting the replanting of second- and later-generation soybeans, Monsanto's ability to protect its patented technology would effectively be lost as soon as the first generation of the product was introduced into the market. Monsanto has therefore never authorized growers to plant soybeans containing the Roundup Ready® trait that were obtained without a valid license agreement or from an unauthorized seller, whether they are "commodity soybeans" (*i.e.*, harvested seed sold to a grain dealer for resale) obtained from a grain elevator, seed produced and saved by the grower himself, or seeds obtained directly from another grower.

2. Petitioner Vernon Bowman operates a farm in Indiana. From 1999 through 2007, Bowman planted Roundup Ready soybeans, including soybeans purchased from an authorized seed dealer. He executed a Technology Agreement that informed him of the restrictions on replanting harvested Roundup Ready soybeans.

In 1999, Bowman developed an idea that, he believed, would allow him to replant harvested Roundup Ready® soybeans to create a new crop, despite the restrictions in the license that prohibited saving and replanting harvested seed. Bowman believed that, if he purchased harvested soybeans from a grain elevator, he could replant those soybeans to create a new crop. Thus, although Bowman would not be replanting his own crop harvest (or a crop he purchased directly from another farmer), he would be replanting seeds that other farmers had grown and sold to the grain elevator as a commodity. And although Roundup Ready® soybeans are often commingled with conventional soybeans in grain elevators, there was no doubt that Bowman hoped and expected that the soybeans he purchased from the elevator would be resistant to glyphosate: each year from 1999 to 2007, after purchasing soybeans from the elevator and planting them (or the progeny of soybeans he had purchased from the elevator in prior years), Bowman sprayed his fields with glyphosate two or more times, which would have killed any conventional soybeans.

3. In 2007, Monsanto sued Bowman for patent infringement. Discovery established that, in each year from 2002 to 2007, Bowman had planted dozens of acres of glyphosate-resistant soybeans, which were either purchased from a grain elevator or saved from the harvest of a prior year's crop also grown from soybeans purchased from the elevator.

Bowman did not deny that he had replanted harvested glyphosate-resistant soybeans. Rather, he argued that, under this Court's decision in *Quanta Computer, Inc.* v. *LG Electronics, Inc.*, 553 U.S. 617 (2008), Monsanto's patent rights in those soybeans were exhausted once the grower sold those harvested soybeans

to the grain elevator (or even earlier, once the grower purchased the soybean seed from Monsanto that was used to grow that crop). The district court, relying on Federal Circuit precedent, rejected that argument and entered summary judgment for Monsanto.

4. On appeal, Bowman renewed his argument that Monsanto's patent rights in second- and subsequent-generation soybeans were exhausted, and that prior Federal Circuit decisions holding to the contrary were no longer valid after *Quanta*. The Federal Circuit rejected that contention and affirmed.

In so ruling, the Federal Circuit examined two of its prior decisions, *Monsanto Co.* v. *McFarling*, 302 F.3d 1291 (Fed. Cir. 2002), and *Monsanto Co.* v. *Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006), that had rejected similar contentions. Each of those cases also involved growers who replanted harvested second-generation soybeans without authorization from Monsanto, although in those cases the growers had saved and replanted their own harvested crops, not soybeans purchased from a grain elevator. As the court explained, in those two decisions, it had identified two distinct reasons why Monsanto retained patent rights in the biotechnology in soybeans harvested from Roundup Ready® soybean seed, and those patent rights were not "exhausted" in the first generation of soybeans.

First, the court explained, prior decisions had noted that Monsanto never made or permitted an unconditional sale of soybeans containing its biotechnology, but always required that soybean seed be sold for planting only through authorized channels and attended by a limited license strictly defining the allowed uses of the soybean seed and its progeny. Pet. App. 13a. Pre-*Quanta* decisions had held that patent rights

in technology embodied in articles are not exhausted unless those articles are subject to an unconditional first sale, which was not the case with seed containing Monsanto's technology. *See id.*

Second, the court noted that in its prior decisions, it had emphasized that the exhaustion doctrine did not apply in any event to articles that had never been subject to an authorized sale, which is the case with second- and subsequent-generation soybeans that are replanted or harvested without Monsanto's authorization. Monsanto retains patent rights in each generation of soybeans, and its patent rights in a soybean are not exhausted unless, at a minimum, *that item* has been the subject of an authorized sale. Thus, as the court had explained in *McFarling*, "the first sale doctrine of patent exhaustion was not implicated, as the new seeds grown from the original batch had never been sold." Pet. App. 13a (quoting *McFarling*, 302 F.3d at 1299; punctuation altered).

In this case, the court of appeals found the second rationale sufficient to reject Bowman's claim of patent exhaustion, without relying on the first (conditional sale) rationale. As the court explained, even if Monsanto's patent rights in the soybeans that Bowman purchased from the grain elevator were exhausted as a result of a grower's sale of those soybeans to the elevator, Monsanto still retained patent rights in the subsequent generation of crops that Bowman grew from those soybeans, which Bowman was never authorized to create: "[O]nce a grower, like Bowman, plants the commodity seeds containing Monsanto's Roundup Ready® technology and the next generation of seed develops, the grower has created a newly infringing article." Pet. App. 14a. The court likened the creation of a new generation of soybeans to the reconstruction of a patented

article, which is not authorized merely because the patentee has authorized the sale of one copy of that article. *See id.*

The court also rejected Bowman's argument that the authorized sale of soybean seed for planting exhausts patent rights in all subsequent generations of soybeans on the theory that the sold seed substantially embodies all the subsequent soybeans. That theory, the court explained, depends on Bowman's contention that the only reasonable and intended use of the subsequent generations of soybeans is to replant them to create new seeds, but that argument is clearly wrong: "[T]here are various uses for commodity seeds, including use as feed." Pet. App. 14a. Thus, the court held, "[w]hile farmers, such as Bowman, may have the right to use commodity seeds as feed, or for any other conceivable use, they cannot 'replicate' Monsanto's patented technology by planting it in the ground to create newly infringing genetic material, seeds, and plants." *Id.*

ARGUMENT

The issue that Bowman asks this Court to decide—whether the Federal Circuit's conditional-sale doctrine remains valid after *Quanta*—is not properly presented. The Federal Circuit did not rely on that doctrine for its decision, but rather relied on the separate rationale that patent rights exist separately in each article embodying patented biotechnology, and so patent rights in an article are not exhausted unless that particular article is the subject of an authorized sale. Thus, the Federal Circuit ruled that, even if Monsanto's patent rights in the soybeans that Bowman purchased from a grain elevator were exhausted, that did not give Bowman the right to plant those soybeans to create a new generation of crops, because in doing so Bowman necessarily

created new articles—another generation of soybeans—in which Monsanto retained its patent rights. That conclusion is correct. It is consistent with basic principles of patent law, under which the sale of an article embodying a patent, even if it exhausts the patentee's rights in that article, does not give the purchaser (or anyone else) the right to manufacture a new copy of that article. Nothing in this Court's decision in *Quanta*, which did not address any issue involving self-replicating technology, suggests otherwise. The petition should therefore be denied.

I. THIS CASE DOES NOT PRESENT AN APPROPRIATE VEHICLE TO CONSIDER THE CONTINUING VALIDITY OF THE FEDERAL CIRCUIT'S CONDITIONAL-SALE DECISIONS, BECAUSE THE FEDERAL CIRCUIT DID NOT RELY ON THAT RATIONALE

Virtually all of the petition for certiorari is devoted to an issue that the Federal Circuit did not address (because it did not need to reach it under the facts presented). Petitioner incorrectly argues that in this case the Federal Circuit relied on the so-called "conditional sale doctrine," a reference to prior circuit court holdings that patent rights in an article are not exhausted unless that article has been the subject of an *unconditional* sale. *See* Pet. 9-16. According to petitioner, those rulings were disapproved by this Court's decision in *Quanta*, which held that "[t]he authorized sale of an article that substantially embodies a patent exhausts the patent holder's rights and prevents the patent holder from invoking patent law to control postsale use of the article." *Quanta Computer, Inc.* v. *LG Elecs., Inc.*, 553 U.S. 617, 638 (2008). Petitioner maintains that after *Quanta* there can be no such thing as a conditional sale of an article under patent law, and that once a pat-

ented article is subject to an authorized sale, whether conditional or unconditional, the patentee loses all rights to enforce patent rights in that article. *See* Pet. 12.

Whatever the merits of petitioner's argument about the continuing vitality of the Federal circuit's conditional-sale rulings, this case does not present a proper vehicle for this Court to resolve that question. The Federal Circuit pointedly did *not* rely on that aspect of its prior decisions to decide this case. Rather, the Federal Circuit expressly relied on a separate ground (consistent with its own prior decisions on self-replicated technology and longstanding principles of patent law articulated by this Court), and held that Monsanto's patent rights in the soybeans that petitioner grew were not exhausted because *those soybeans* had never been the subject of *any* sale—conditional or unconditional. As the court of appeals explained, even if Monsanto's rights in the seeds that Bowman *purchased* were exhausted, its rights in the soybeans he *created* by planting the seeds remained intact, and by planting the seeds Bowman manufactured "a newly infringing article"—new soybeans. Pet. App. 14a.

It is true that the Federal Circuit's prior decisions on self-replicating technology invoked both rationales for rejecting exhaustion arguments—*i.e.*, both that Monsanto's rights in the original soybean seeds were not exhausted because they were never the subject of an unconditional sale, and also that Monsanto's rights in subsequent generations of harvested soybeans were not exhausted because those soybeans were never the subject of any authorized sale (whether conditional or unconditional). *See Monsanto Co.* v. *McFarling*, 302 F.3d 1291, 1298-1299 (Fed. Cir. 2002) (relying on both

rationales); *Monsanto Co.* v. *Scruggs*, 459 F.3d 1328, 1336 (Fed. Cir. 2006) (same). But the Federal Circuit made clear in this case that the rationales are separate and independent, and that Monsanto's patent rights in progeny do not depend on the vitality of the conditional-sale concept. Rather, the court of appeals relied squarely on the understanding that exhaustion proceeds on an article-by-article basis, and that exhaustion of patent rights in one article that has been sold does not exhaust patent rights in another article that has never been the subject of an authorized sale. *See* Pet. App. 13a-14a. Thus, because the soybeans that Bowman grew were never the subject of an authorized sale, Monsanto's patent rights in those soybeans were not exhausted.

This reasoning is entirely consistent with *Quanta*. Although the Court in *Quanta* was not presented with any issue concerning self-replicating technology, *Quanta* confirms that patent rights may be exhausted only on an article-by-article basis. *See* 553 U.S. at 625 ("The longstanding doctrine of patent exhaustion provides that the initial authorized sale of a patented item terminates all patent rights to *that item*." (emphasis added)). Each time that this Court articulated the exhaustion standard in *Quanta*, it specifically spoke of exhaustion of patent rights in the particular article or product that was sold, rather than more broadly to the rights of the parties to the sale. *See, e.g.*, *id.* at 625, 626-628, 631-632, 636-637. That framework explains why Monsanto's rights in the progeny of the seed that Bowman planted were not exhausted, for the soybean seed that a grower plants in the ground is not the same item as the scores of new soybeans that grow from that single seed. Thus, the exhaustion doctrine does not ap-

ply to subsequent generations of soybeans that were never sold.

II. THE FEDERAL CIRCUIT'S ACTUAL BASIS FOR ITS DECISION IS CORRECT

Bowman devotes just more than a page of his petition (Pet. 19-20) to challenging the actual basis of the Federal Circuit's decision, and makes two arguments in support of that challenge. First, Bowman argues that the Federal Circuit erred in ruling that, when Bowman planted soybean seed to create a new crop, he made (without authorization) a new patented article (the new soybeans). Rather, Bowman argues, planting the soybeans only constituted an authorized *use* of the soybean seed that he purchased from the grain elevator. But the Federal Circuit's decision is correct.

Bowman appears to be arguing that the activities of infringement (making, using, or selling an invention without authorization) prohibited by 35 U.S.C. § 271(a) are mutually exclusive. That is, according to Bowman, an activity that constitutes an infringing "use" cannot also constitute an infringing manufacture, and that his activity of planting patented soybean seed for the purpose of growing an exponential number of new patented soybeans was more akin to a "use" than to a "making." Pet. 19. Bowman points to no support for that contention, and there is none.

To be sure, when a farmer plants soybean seed to create a new crop of soybeans, he uses the seeds; but that hardly means that he does not also make the soybeans that grow from those seeds. While the situations where an invention is simultaneously both used and made may be unusual, there is nothing inherently impermissible or nonsensical in concluding that Bowman

engaged in both activities when he planted Roundup Ready® soybean seed. Rather, that conclusion follows from the fact that the technology patented by Monsanto is self-replicating. And although, as Bowman observes (Pet. 20), seed left untended in a field might also self-replicate, that does not undermine the conclusion that, when Bowman planted seed in the ground for the express purpose of growing soybeans, he "made" the soybeans that then emerged from the ground, and that was an act of infringement.

Bowman's argument overlooks the fundamental point in patent law that a patentee receives the exclusive rights (among others) to make, use, *and* sell its invention, and that those are separate rights that may be vindicated by a suit for infringement. 35 U.S.C. § 271(a); *see also Caterpillar Tractor Co.* v. *International Harvester Co.*, 106 F.2d 769, 774 (9th Cir. 1939) ("the manufacturing of one machine by the plaintiff would have made plaintiff subject to a suit for infringement regardless of 'use'"). As the Federal Circuit explained in an earlier case (on which it relied in the decision below), "the rights of ownership" that the purchaser of a patented article obtains "do not include the right to construct an essentially new article on the template of the original, for the right to make the article remains with the patentee." *Jazz Photo Corp.* v. *International Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001). This Court has also recognized that point in its decisions holding that, although the purchaser of a patented article may implicitly obtain the right to *repair* that article as an incident of normal use, it does not thereby obtain the right to completely rebuild the article—that is, to make it. *Compare Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 365 U.S. 336, 342-343 (1961) (right to repair passes with purchase of patented

article) *with American Cotton-Tie Co.* v. *Simmons*, 106 U.S. 89, 93-94 (1882) (purchaser does not obtain right of reconstruction).

Second, Bowman argues that it is senseless to speak of a farmer's "manufacturing" or "making" a new generation of soybeans by planting soybean seeds, and attempts to draw a distinction between the "manufacture" of soybean seeds containing Monsanto's patented technology through the insertion of germplasm into seeds, and the planting of seeds already containing the patented technology to make new seeds containing the patented technology. Pet. 20. According to Bowman, it cannot be the case that both activities constitute "making" under 35 U.S.C. § 271(a). But Bowman offers no reason why that should be so, and no decision of this Court or any other court suggests that "making" under § 271(a) is limited to only one particular subset of activities that result in the creation of an article embodying the patent.

Bowman's fundamental argument appears to be that exhaustion of rights in one generation of soybeans must inevitably extend to subsequent generations as well because the only reasonable and intended use of soybean seeds is to plant them and allow them to grow and be harvested. But as the court of appeals explained (Pet. App. 14a), that is clearly not correct. There are many uses of soybeans purchased from a grain elevator, as well as from soybeans grown from those soybeans. Soybeans are used in the manufacture of many food products, and for animal feed. Thus, as the court of appeals explained, "[w]hile farmers, like Bowman, may have the right to use commodity seeds as feed, ... they cannot 'replicate' Monsanto's patented technology by planting it in the ground to create newly infringing genetic material, seeds, and plants." *Id.*

Although Bowman objects (Pet. 17-18) that the Federal Circuit has effectively eliminated the exhaustion defense for a purchaser of patented seeds, Bowman's exhaustion arguments would effectively eliminate the usefulness of patents in self-replicating technology. In Bowman's view, once a patentee like Monsanto authorizes the sale of an article containing its patented technology, it loses all rights in all subsequent copies of that article containing that same technology. The inevitable result of accepting that argument would be to discourage inventors from devoting resources to inventing self-replicating technology. If the sale of one soybean containing patented traits—which reproduces exponentially—meant that the patentee could not enforce its rights in any of the progeny of that soybean, or the progeny of that progeny, then inventors could not make the business of genetically modified biotechnology commercially viable, for they would quickly be in competition with a multitude of copies of their own products, distributed by persons who had no need to recoup the costs of developing the invention. Thus, as the Federal Circuit correctly recognized, "[t]he fact that a patented technology can replicate itself does not give a purchaser the right to use replicated copies of the technology. Applying the first sale doctrine to subsequent generations of self-replicating technology would eviscerate the rights of the patent holder." Pet. App. 14a (internal quotation marks omitted).

That conclusion is not inconsistent with any decision of this Court, any decision of any other court of appeals, or any other principle of patent law. This Court has not directly addressed the exhaustion doctrine in the context of patents for self-replicating technology, but to the extent the Court has considered intellectual property rights embodied in seed, it has assumed that

patent rights extend to subsequent generations of seed, implicitly recognizing that they are not exhausted by the sale of a preceding generation.[1] In *Asgrow Seed Co.* v. *Winterboer*, 513 U.S. 179 (1995), the Court addressed the authority of growers to make commercial sales of second and subsequent generations of seed protected by a plant patent under the Plant Variety Protect Act ("PVPA"). The Court held that, even though the PVPA specifically allows grower to save second-generation seed generated from first-generation seed sold through an authorized sale, growers were not authorized to make commercial sales of the second and subsequent generations. *Id.* at 182. If (as Bowman suggests) the first authorized sale of a seed exhausts all patent rights as to subsequent generations, then *Asgrow* should have been decided differently. *See also J.E.M. Ag Supply, Inc.* v. *Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 143 (2001) (observing that "there are no exemptions for research or saving seed under a utility patent"). Accordingly, Bowman has identified no basis for further review of the Federal Circuit's decision.

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[1] Bowman notes (Pet. 7) that the Solicitor General observed in a 2005 amicus brief that the question whether the patent-exhaustion doctrine applies to restrictions on copies containing self-replicating technology was "novel." He fails to mention, however, that the Solicitor General also observed in that brief that the Federal Circuit's rejection of an exhaustion claim in *McFarling* was "not inconsistent with any decision of this Court or of a court of appeals," and not worthy of this Court's review. U.S. Br. 14-15 n.8, *McFarling* v. *Monsanto Co.*, 545 U.S. 1189 (May 27, 2005) (No. 04-31), *available at* 2005 WL 1277857.

CONCLUSION

The petition for a writ of certiorari should be denied.

Respectfully submitted.

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AMICUS CURIAE BRIEF

No. 11-796

In the Supreme Court of the United States

VERNON HUGH BOWMAN, PETITIONER

v.

MONSANTO COMPANY, ET AL.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF FOR THE UNITED STATES AS AMICUS CURIAE

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QUESTION PRESENTED

Whether the authorized sale of one generation of a patented plant seed exhausts a patentee's right to control subsequent generations of that seed.

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ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF FOR THE UNITED STATES AS AMICUS CURIAE

This brief is submitted in response to the Court's order inviting the Solicitor General to express the views of the United States. In the view of the United States, the petition for a writ of certiorari should be denied.

STATEMENT

1. Respondent Monsanto manufactures the herbicide Roundup®. The active ingredient in Roundup is glyphosate, which kills plants by inhibiting the activity of an enzyme necessary for growth. Because Roundup would otherwise affect crops and weeds alike, respondent developed a genetic sequence that, when inserted into the germplasm of certain seeds (including soybean seeds), produces a growth enzyme that is unaffected by glyphosate. Pet. App. 2a-3a, 20a.

A grower using seed containing that genetic sequence can spray Roundup (or another glyphosate-based herbicide) on his crops without harming them.

Seed containing that genetic modification is marketed as Roundup Ready® seed. This case involves two patents issued to respondent that cover different aspects of the Roundup Ready technology. Pet. App. 3a-6a, 20a-21a.

Respondent licenses Roundup Ready technology to third-party seed companies, which insert the genetic trait into their own soybean seed varieties. The licensed seed companies then sell the Roundup Ready soybeans to growers for planting. The herbicide-resistant trait is carried forward into each successive generation of soybeans produced from the genetically altered seeds, and the harvested commodity is virtually identical to the planted soybean seed. For that reason, respondent authorizes the licensed seed companies to sell only to growers who are willing to enter into a licensing agreement, often referred to as a "Technology Agreement." Pet. App. 6a-7a, 21a.

By signing a Technology Agreement, a purchasing grower agrees

> (1) to use the seed containing Monsanto gene technologies for planting a commercial crop only in a single season;
>
> (2) to not supply any of this seed to any other person or entity for planting;
>
> (3) to not save any crop produced from this seed for replanting, or supply saved seed to anyone for replanting; and
>
> (4) to not use this seed or provide it to anyone for crop breeding, research, generation of herbicide registration data, or seed production.

Pet. App. 7a (citation and internal quotation marks omitted). Growers are authorized to use or sell the crop produced from the purchased seed for most purposes

other than planting. For example, respondent authorizes growers to sell the harvested crop (*i.e.*, the second-generation soybean) to grain elevators as a commodity, and it does not require growers to place any restrictions on the grain elevator's subsequent sale of that seed. See *id.* at 7a-8a.

2. Petitioner, a farmer in Indiana, purchased Roundup Ready soybean seeds from one of respondent's licensed seed companies, and he signed a Technology Agreement that included the conditions set forth above. From 1999 through 2007, petitioner planted those seeds as his first soybean crop of the season. Consistent with the Technology Agreement, he did not save the harvested crop for replanting but instead sold it to a local grain elevator. Pet. App. 8a-9a, 21a-22a.

Petitioner also planted a second soybean crop later in the growing season, a practice that is considered riskier. For that second-crop planting, petitioner purchased "commodity seed" from a grain elevator. Commodity seed is less expensive than the Roundup Ready seed, and it consists of a mixture of undifferentiated seed from the previous year's harvest. Although commodity seed may therefore include some conventional soybean varieties, in 2007, nearly 94 percent of Indiana's acres of soybeans were planted using herbicide-resistant seeds. When petitioner applied a glyphosate-based herbicide to his fields, he confirmed that many of the second-crop plants were glyphosate resistant. Pet. App. 7a-9a, 22a-23a.

Each year, petitioner saved seed harvested from his second crop for replanting in later years. Petitioner supplemented those seeds with additional purchases of commodity seed from the grain elevator, and he treated his second crop with a glyphosate-based herbicide.

Thus, from 1999 through 2007, petitioner planted Roundup Ready soybean seed purchased from one of respondent's licensed seed companies for his first-crop planting and sold the second-generation seed to a grain elevator; for his second crop, he planted commodity seed purchased from a grain elevator (and the progeny thereof), which included soybeans containing the Roundup Ready trait. Pet. App. 9a, 23a.

3. Respondent brought suit in the United States District Court for the Southern District of Indiana, alleging that petitioner had infringed two of its patents by "making, using, offering for sale, selling, or importing" soybean seed containing the Roundup Ready trait without authorization. See Compl. ¶¶ 22, 29. Petitioner raised patent exhaustion as a defense to infringement, arguing that respondent's failure to restrict sale of the second-generation seed rendered its patents exhausted with respect to any subsequent use of that seed. See Pet. App. 24a. The district court granted summary judgment in favor of respondent and entered judgment in the amount of $84,456.20. *Id.* at 31a-43a, 52a.

4. The court of appeals affirmed. Pet. App. 1a-18a. The court observed that it had previously "dealt with unauthorized planting of second-generation seeds" in *Monsanto Co.* v. *McFarling*, 302 F.3d 1291 (Fed. Cir. 2002), cert. denied, 537 U.S. 1232 (2003), and *Monsanto Co.* v. *Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006), cert. denied, 549 U.S. 1342 (2007). Pet. App. 12a. The court explained that, in both *McFarling* and *Scruggs*, the Federal Circuit had rejected a patent-exhaustion defense asserted by growers who had saved Roundup Ready soybean seeds from the first harvest and had replanted them the next season in violation of a Technology Agreement. *Id.* at 12a-13a.

The court of appeals held that, "[s]imilarly, here, patent exhaustion does not bar an infringement action." Pet. App. 14a. The court stated that, "[e]ven if [respondent's] patent rights in the commodity seeds are exhausted, such a conclusion would be of no consequence because once a grower, like [petitioner], plants the commodity seeds containing [respondent's] Roundup Ready technology and the next generation of seed develops, the grower has created a newly infringing article." *Ibid.* "The right to use," the court explained, "do[es] not include the right to construct an essentially new article on the template of the original, for the right to make the article remains with the patentee." *Ibid.* (quoting *Jazz Photo Corp.* v. *International Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001), cert. denied, 536 U.S. 950 (2002)) (brackets in original). The court observed that "[a]pplying the first sale doctrine to subsequent generations of self-replicating technology would eviscerate the rights of the patent holder." *Ibid.* (quoting *Scruggs*, 459 F.3d at 1336).

The court of appeals also rejected, as unsupported by the record, petitioner's suggestion that replanting commodity seeds to create new seeds is the "only reasonable and intended use" of the commodity seeds. Pet. App. 14a (quoting *Quanta Computer, Inc.* v. *LG Elecs., Inc.*, 553 U.S. 617, 631 (2008)). The court explained that "there are various uses for commodity seeds, including use as feed." *Ibid.* The court concluded that, although petitioner and other farmers "may have the right to use commodity seeds as feed, or for any other conceivable use, they cannot 'replicate' [respondent's] patented technology by planting it in the ground to create newly infringing genetic material, seeds, and plants." *Ibid.*

DISCUSSION

This case involves application of the patent-exhaustion defense to an unusual product that embodies the patented technology and reproduces itself in materially identical form. Petitioner's principal argument is that the Federal Circuit's "conditional sale" doctrine is inconsistent with this Court's patent-exhaustion decisions, including most recently *Quanta Computer, Inc.* v. *LG Electronics, Inc.*, 553 U.S. 617 (2008) (*Quanta*). That issue is not properly presented in this case, however, because the "conditional sale" doctrine was not the basis for the decision below. Rather, the court of appeals held that the authorized sale of a patented article does not grant the purchaser a right to make a newly infringing article, and that petitioner had infringed respondent's exclusive right to "make" the patented article by producing subsequent generations of Roundup Ready seed. The court of appeals' decision is correct and does not conflict with any decision of this Court or any other court of appeals. The Court therefore should deny the petition for a writ of certiorari.

A. Although The Federal Circuit's "Conditional Sale" Doctrine Is Inconsistent With This Court's Precedents, The Court Of Appeals Did Not Rely On That Doctrine Here

Petitioner's principal argument (Pet. 9-16) is that the Federal Circuit's "conditional sale" doctrine is inconsistent with this Court's patent-exhaustion precedents. The conditional-sale approach does conflict with this Court's patent-exhaustion decisions, but the court of appeals did not rely on that approach here. This case is therefore an inappropriate vehicle to consider the continuing validity of the Federal Circuit's pre-*Quanta* case law.

1. The Patent Act grants a patentee the "right to exclude others from making, using, offering for sale, or selling the invention." 35 U.S.C. 154(a)(1); see 35 U.S.C. 271(a) ("[W]hoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States, or imports into the United States any patented invention during the term of the patent therefor, infringes the patent."). Each of the enumerated exclusive rights is a "substantive right[]" that "may be granted or conferred separately by the patentee." *Adams* v. *Burke*, 84 U.S. (17 Wall.) 453, 456 (1873); see *Brulotte* v. *Thys Co.*, 379 U.S. 29, 30 (1964).

Since *Bloomer* v. *McQuewan*, 55 U.S. (14 How.) 539, 549-550 (1853), this Court has repeatedly held that the exclusive rights to use and to sell are exhausted, as to a given article embodying a patented invention, upon the first valid sale of the article by the patentee or an authorized licensee. See, *e.g.*, *Quanta*, 553 U.S. at 625-628; *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 377 U.S. 476, 497 (1964) (plurality opinion); *United States* v. *Univis Lens Co.*, 316 U.S. 241, 251-252 (1942) (*Univis*); *Motion Picture Patents Co.* v. *Universal Film Mfg. Co.*, 243 U.S. 502, 508-518 (1917); *Keeler* v. *Standard Folding Bed Co.*, 157 U.S. 659, 666 (1895); *Hobbie* v. *Jennison*, 149 U.S. 355, 361-363 (1893); *Adams*, 84 U.S. (17 Wall.) at 456. As the Court in *Adams* explained, those decisions rest on the principle that "the sale by a person who has the full right to make, sell, and use such a machine carries with it the right to the use of that machine to the full extent to which it can be used." 84 U.S. (17 Wall.) at 455. Thus, the authorized sale of a patented article "exhausts the monopoly in that article and the patentee may not thereafter, by virtue of his patent, control the

use or disposition of the article." *Univis*, 316 U.S. at 250.

2. Before *Quanta*, the doctrine of patent exhaustion had evolved in the Federal Circuit in a manner that was materially different from, and inconsistent with, the doctrine expounded by this Court. Beginning with *Mallinckrodt, Inc.* v. *Medipart, Inc.*, 976 F.2d 700, 706-708 (1992), the Federal Circuit had found the exhaustion doctrine inapplicable to what it viewed as "conditional" sales, a category that encompassed any sale subject to unilateral or bilateral restrictions on the use or resale of the purchased article. As a result, a patentee could attach (by notice or agreement) restrictions on products embodying its patented invention and enforce those restrictions, in actions for patent infringement, against downstream purchasers even after an authorized sale by the patentee or a licensee. See *LG Elecs., Inc.* v. *Bizcom Elecs., Inc.*, 453 F.3d 1364, 1369-1370 (Fed. Cir. 2006), rev'd by *Quanta*, 553 U.S. 617 (2008). In the Federal Circuit's view, such restrictions were enforceable in patent-infringement suits unless the restriction was not "within the patent grant" (*i.e.*, did not "relate[] to subject matter within the scope of the patent claims"), had "anticompetitive effects extending beyond the patentee's statutory right to exclude," and violated antitrust law. *Mallinckrodt*, 976 F.2d at 708.

As the court below recognized (Pet. App. 13a), prior Federal Circuit decisions involving the unauthorized planting of subsequent-generation patented seed had relied in part on that conditional-sale approach. In *Monsanto Co.* v. *Scruggs*, 459 F.3d 1328 (2006), cert. denied, 549 U.S. 1342 (2007), the Federal Circuit rejected a patent-exhaustion defense asserted by a farmer who had purchased Roundup Ready soybean seed from a licensed

seed company, and had saved and replanted second-generation seed in violation of a Technology Agreement that he never signed. In finding that the patentee's rights had not been exhausted, the court relied in part on the fact that there had been "no unrestricted sale because the use of the seeds by seed growers was conditioned on obtaining a license from Monsanto." *Id.* at 1336.[1] The court also stated, however, that "the new seeds grown from the original batch had never been sold," *ibid.* (citation omitted), and that "[w]ithout the actual sale of the second generation seed to [the farmer], there can be no patent exhaustion," *ibid.*

In *Monsanto Co.* v. *McFarling*, 302 F.3d 1291 (2002), cert. denied, 537 U.S. 1232 (2003), the Federal Circuit

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[1] In *Scruggs*, there apparently had been no authorized sale of the *first-generation* Roundup Ready seed. The licensed seed company was authorized to sell only to growers who had signed a Technology Agreement, and the purchasing farmer was aware of that limitation, but the parties consummated the sale without satisfying that condition. 459 F.3d at 1333, 1336. *Scruggs* therefore did not involve a post-sale limitation on use by the purchaser, but a pre-sale limitation on sale by the licensee. Even under this Court's case law, an authorized sale is necessary to trigger exhaustion. See *Quanta*, 553 U.S. at 636 ("Exhaustion is triggered only by a sale authorized by the patent holder."); *General Talking Pictures Corp.* v. *Western Elec. Co.*, 304 U.S. 175, 181-182 (holding that exhaustion did not apply because the manufacturer had no authority to sell to that market and the manufacturer "could not convey * * * what both [the manufacturer and the purchaser] knew it was not authorized to sell"), aff'd on reh'g by 305 U.S. 124 (1938); see also *Static Control Components, Inc.* v. *Lexmark Int'l, Inc.*, 615 F. Supp. 2d 575, 588 (E.D. Ky. 2009) (distinguishing *Scruggs* because, *inter alia*, "any sale to [Scruggs] was unauthorized"); cf. *Quanta*, 553 U.S. at 636-637 (concluding that "Intel's authority to sell its products embodying the LGE Patents was not conditioned on the notice or on Quanta's decision to abide by LGE's directions in that notice").

concluded that a farmer who had purchased Roundup Ready soybean seed from a licensed seed company, and who had then saved and replanted second-generation seed in violation of a Technology Agreement that he *did* sign, was unlikely to succeed on his patent-exhaustion defense. The court stated that the patent-exhaustion doctrine was "not implicated" because "the new seeds grown from the original batch had never been sold," and "[t]he original sale of the seeds did not confer a license to construct new seeds." *Id.* at 1298-1299. The court also stated, however, that "[t]he price paid by the purchaser 'reflects only the value of the "use" rights conferred by the patentee.'" *Id.* at 1299. Although the court did not elaborate on that proposition, it was quoting *B. Braun Medical, Inc.* v. *Abbott Laboratories*, 124 F.3d 1419, 1426 (Fed. Cir. 1997), a decision that had reiterated the Federal Circuit's understanding of the exhaustion doctrine as "not apply[ing] to an expressly conditional sale or license." *Ibid.*[2]

3. Petitioner argues (Pet. 10-16) that the approach to patent exhaustion adopted by the Federal Circuit in *Mallinckrodt* and subsequent cases, and applied in part in *Scruggs* and *McFarling*, is inconsistent with this Court's cases. As the United States explained in *Quanta*, petitioner's general criticism of the Federal Circuit's "conditional sale" doctrine is correct. This Court's precedents make clear that patent exhaustion applies despite explicit restrictions imposed by the patentee, as long as there has been an authorized sale of the patented item. See U.S. Merits Amicus Br. at 8-24,

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[2] The *McFarling* court also cited *Mallinckrodt*, but only in the context of discussing the farmer's antitrust and patent-misuse allegations. 302 F.3d at 1298. Even there, the court described the post-sale restriction as one "on use to make additional patented product." *Ibid.*

Quanta, *supra* (No. 06-937). It is not clear, however, whether the Federal Circuit will continue to adhere to the *Mallinckrodt* line of cases after *Quanta*.[3] What is clear is that the court did not do so here.

The decision below did not rest in any part on the presence (or absence) of post-sale restrictions imposed by respondent. The court did cite *Mallinckrodt*, but only in the context of summarizing the earlier patented seed cases (*McFarling* and *Scruggs*). Pet. App. 13a. In deciding *this* case, the court did not determine whether respondent's "rights in the commodity seeds" had been "exhausted" because it found that point to be "of no consequence." *Id.* at 14a. "Even if" exhaustion had occurred, the court explained, petitioner would still be liable because he had "created a newly infringing article" when he "plant[ed] the commodity seeds containing respondent's Roundup Ready technology and the next generation of seed develop[ed]." *Ibid.* The court thus recognized that, even if respondent's rights in the commodity seed had been exhausted, so that petitioner had a "right to use" that seed for any "conceivable use," petitioner still did not have a "right to construct an essentially new article on the template of the original." *Ibid.* (quoting *Jazz Photo Corp.* v. *International Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001), cert. denied, 536 U.S. 950 (2002)); see Pet. 17 (acknowledging that the court's holding was based on the understanding

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[3] In *Princo Corp.* v. *International Trade Comm'n*, 616 F.3d 1318, 1328 (2010), cert. denied, 131 S. Ct. 2480 (2011), the en banc Federal Circuit cited *Mallinckrodt* and *B. Braun* favorably for the proposition that the exhaustion doctrine does not apply "to a conditional sale or license." That case, however, involved patent misuse rather than patent exhaustion, and the court did not discuss *Quanta*.

that "farmers 'make' progeny seeds rather than 'use' purchased seeds"); pp. 12-17, *infra*. This case therefore provides no occasion for the Court to consider the continuing validity of the Federal Circuit's conditional-sale approach to exhaustion after *Quanta*.

B. The Authorized Sale Of A Patented Article Does Not Grant The Purchaser The Right To Make A Newly Infringing Article

The court of appeals correctly held that, even if respondent's patent rights in the commodity seed have been exhausted, petitioner still had no right to make a newly infringing article by planting and harvesting that seed.

1. As explained above (see p. 7, *supra*), the Patent Act grants a patent holder separate rights to exclude others from making, using, offering for sale, and selling a patented invention. An authorized first sale of an article embodying the patented invention exhausts the patentee's rights to use and sell that patented article. The patent-exhaustion doctrine, however, has never encompassed the *making* of *new* infringing articles.

In describing the exhaustion doctrine, this Court has consistently referred to the relinquishment of patent rights only with respect to the particular article sold. See, *e.g.*, *Quanta*, 553 U.S. at 625 (describing the "longstanding doctrine of patent exhaustion" as providing that "the initial authorized sale of a patented item terminates all patent rights to that item"); *Univis*, 316 U.S. at 249 (discussing exhaustion of the patent monopoly "with respect to the article sold"); *Mitchell* v. *Hawley*, 83 U.S. (16 Wall.) 544, 547 (1872) (explaining that after an authorized sale a patentee "ceases to have any interest whatever in the patented machine so sold and delivered"); cf. 17 U.S.C. 109(a) (codifying first-sale

doctrine in copyright law as authorizing the owner of a "particular copy * * * to sell or otherwise dispose of the possession of that copy"). As the Court explained in *Univis*, "the purpose of the patent law is fulfilled with respect to *any particular article* when the patentee has received his reward for the use of his invention by sale of the article," and "once that purpose is realized the patent law affords no basis for restraining the use and enjoyment *of the thing sold.*" 316 U.S. at 251 (emphases added). But the purchaser of the patented article "does not acquire any right to construct another machine," *Mitchell*, 83 U.S. (16 Wall.) at 548, or to make a "second creation of the patented entity," *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 365 U.S. 336, 346 (1961) (*Aro I*). Cf. *Bobbs-Merrill Co.* v. *Straus*, 210 U.S. 339, 350 (1908) ("The purchaser of a book, once sold by authority of the owner of the copyright, may sell it again, although he could not publish a new edition of it.").

The critical distinction between use of a patented article, and the making of a new article, arises most frequently when courts determine whether the purchaser has permissibly repaired a patented article, or instead has impermissibly reconstructed it. A patentee "cannot prevent those to whom he sells from . . . reconditioning articles worn by use," but it can prevent them from "in fact mak[ing] a new article." *Aro I*, 365 U.S. at 343 (quoting *United States* v. *Aluminum Co. of Am.*, 148 F.2d 416, 425 (2d Cir. 1945)); see *American Cotton-Tie Co.* v. *Simmons*, 106 U.S. 89, 93-94 (1882) ("Whatever right the [purchasers] could acquire to the use of the old buckle, they acquired no right to combine it with a substantially new band, to make a cotton-bale tie."); *Wilson* v. *Simpson*, 50 U.S. (9 How.) 109, 123-125 (1850) (holding that purchaser of patented article may use and repair it,

but may not reconstruct the patented invention). Whereas repair is a permissible use of the article sold, reconstruction is an impermissible making of a new article. Thus, as the court of appeals explained (Pet. App. 14a), "the rights of ownership do not include the right to construct an essentially new article on the template of the original, for the right to make the article remains with the patentee." *Jazz Photo Corp.*, 264 F.3d at 1102.

2. Petitioner does not appear to dispute the basic proposition that, although the authorized sale of a patented article affords the purchaser the right to use or dispose of *that* article, it does not grant the purchaser the right to make a newly infringing article. Instead, he argues (Pet. 19-20) that the planting of patented seed to generate new seed constitutes "use" of the purchased seed, and not the "making" of newly infringing seed. That argument lacks merit.

To be sure, planting soybean seed in order to produce a new crop is naturally described as "using" the seed that was planted. Contrary to petitioner's contention, however, the planting and harvesting of soybeans *also* constitutes the "making" of newly infringing seed. The careful distinction between repair and reconstruction reflects the understanding that, even when the patentee's rights in a sold article have been exhausted, infringement may still occur if the purchaser "uses" the sold article to "make" a newly infringing one. *E.g.*, *American Cotton-Tie Co.*, 106 U.S. at 93-94.

Petitioner recognizes that licensed seed companies "make" new seeds "when they artificially insert patented germplasm into naturally occurring soybean seeds." Pet. 19. Petitioner states that "[t]he activity of these companies in making seeds differs in fundamental ways from the activities of farmers in using them." Pet. 20.

What petitioner describes, however, are simply two different methods of "making" Roundup Ready seed. Although the Patent Act does not define the term "making," the verb "make" is commonly defined as "to bring about," "to cause to happen," or "to cause to exist, occur, or appear." *Webster's Third New International Dictionary* 1363 (1993). Petitioner "cause[d] [the progeny seed] to exist," even though he accomplished that result through a method different from the one employed by respondent's licensed seed companies.[4]

Petitioner also argues that farmers do not "make" newly infringing seeds by planting because seeds "will *self-replicate* without farmer assistance." Pet. 20. But petitioner did not simply leave the seed "untended on a field" (*ibid.*). Rather, he intentionally planted the commodity seed in order to create a new crop of soybeans; he saved some of that new crop to replant the next growing season; he continued to plant, harvest, and save seed for eight successive years; and he exploited the known glyphosate-resistant properties of the progeny

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[4] In *Deepsouth Packing Co.* v. *Laitram Corp.*, 406 U.S. 518, 526-532 (1972) (*Deepsouth*), the Court concluded that a company did not "make" the patented invention in the United States when only the combination was patented and the actual assembly of that combination, from parts made in the United States, occurred overseas. The Court held that the manufacture of the constituent parts did not, by itself, constitute the "making" of the combination. *Id.* at 527-528; see *id.* at 528 (referring to "operable assembly of the whole and not the manufacture of its parts"). And while the patented combination was "made" when the constituent parts were assembled, that conduct did not infringe the relevant patent because the assembly occurred outside the United States. *Id.* at 526-527. The Court's analysis in *Deepsouth* does not cast doubt on the correctness of the decision below. Petitioner's activities culminated, and were intended to culminate, in the creation within the United States of the final patented product.

seed by treating his crops with a glyphosate-based herbicide. Pet. App. 9a-10a.

This Court's decision in *J.E.M. AG Supply, Inc.* v. *Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124 (2001) (*J.E.M.*), reinforces the conclusion that the term "make" encompasses the deliberate creation of newly infringing articles by planting patented seed. In *J.E.M.*, the Court held that utility patents are available to plants under the Patent Act, 35 U.S.C. 101, independent of any rights under the Plant Variety Protection Act (PVPA), 7 U.S.C. 2321 *et seq.* In so holding, the Court repeatedly emphasized that the PVPA provides an exemption allowing farmers to save seed and to use that seed for replanting, whereas there is no "exemption[] for * * * saving seed under a utility patent." *J.E.M.*, 534 U.S. at 143; see *id.* at 129 n.1, 140.[5] In that respect, among others, "utility patent holders receive greater rights of exclusion." *Id.* at 143. That distinction would have no practical significance, however, if the unauthorized creation of new seed was treated as non-infringing under 35 U.S.C. 154 and 271 (2006 & Supp. IV 2010) based on the patent-exhaustion doctrine. Petitioner would effectively read a seed-saving exemption into the Patent Act.

Petitioner's argument is also in some tension with this Court's decision in *Asgrow Seed Co.* v. *Winterboer*, 513 U.S. 179 (1995), which involved an earlier version of

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[5] The PVPA exemption provides that "it shall not infringe any right [under the PVPA] for a person to save seed produced by the person from seed obtained, or descended from seed obtained, by authority of the owner of the variety for seeding purposes and use such saved seed in the production of a crop for use on the farm of the person, or for sale as provided in this section." 7 U.S.C. 2543. Thus, like the patent-exhaustion doctrine, the PVPA exemption is contingent on an initial authorized sale of the patented seed.

the PVPA's seed-saving exemption. The Court held that the exemption permitted a grower to save progeny seed for replanting and to sell seed saved for that purpose, but that it did not allow him to sell seed commercially. *Id.* at 192-193. If, as petitioner contends, the authorized sale of patented seed exhausts a patentee's rights in that seed, as well as in its progeny, then a grower could save second-generation seed and sell that seed commercially without infringing the patent. That would, in turn, afford greater rights of exclusion to holders of a PVPA certificate than to utility patent holders, contrary to this Court's understanding in *J.E.M.* See 534 U.S. at 143 ("utility patent holders receive greater rights of exclusion").

3. Petitioner's other arguments are also unpersuasive. Petitioner appears to suggest that, because planting is a "common," "foreseeable," and "intended" use of seed, a grower's right to plant should prevail over a patentee's right to exclude others from making the patented seed. Pet. 17-18. Planting, however, is not the "only reasonable and intended use" of harvested soybeans. *Quanta*, 553 U.S. at 631; see Pet. App. 14a. Growers can use progeny seed for animal feed, *ibid.*, and they can sell it as a commodity. See *Asgrow*, 513 U.S. at 188 ("Farmers generally grow crops to sell."). Indeed, because for soybeans "the crop is the seed," *ibid.*, it would be pointless to produce soybeans if the seed had no productive use other than further propagation.[6]

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[6] With other crops, by contrast, the commodity is often the roots, stems, leaves, or flowers. For such crops, it may be possible to "use" purchased seed to produce the commodity without "making" next-generation seed. See *Asgrow*, 513 U.S. at 191 n.5 (noting that, to obtain seed from some other vegetable crops, farmers must first allow the crop to overripen).

Where, as here, a purchaser can use the patented article without also making a newly infringing article, there is no reason to extinguish the patentee's separate and exclusive right to make the invention. See *Adams*, 84 U.S. (17 Wall.) at 456 (exclusive rights "may be granted or conferred separately by the patentee").

This does not mean, as petitioner suggests (Pet. 17-18), that the patent-exhaustion doctrine is inapplicable to patented seed. The authorized sale of first-generation seed exhausts the patentee's right to control the use and disposition of *that* seed. Exhaustion may also apply to progeny seed to the extent the patentee authorizes growers to sell second or subsequent-generation seed and they in fact do so. In authorizing the sale of each generation of seed, the patentee exhausts its right to control the use or disposition of *that* generation. But the sale of patented seed never authorizes a purchaser to create a new generation; the right to make is a distinct, exclusive right that remains with the patentee. The patentee can, of course, authorize a grower to make progeny seed, as it did here with respect to the licensed Roundup Ready seed. But the right to make newly infringing seed is never the product of patent exhaustion.

4. Petitioner also contends (Pet. 9, 17-18) that the court of appeals' decision will eliminate commodity soybeans as a low-cost alternative for second-crop plantings, and will otherwise alter traditional farming practices. For at least two reasons, those policy considerations do not warrant this Court's review.

First, Congress is better equipped than is this Court to weigh petitioner's concerns against the countervailing considerations that support continuing patent protection in this context. If petitioner's view were adopted, the

first authorized sale of a single Roundup Ready soybean would extinguish all of respondent's patent rights to that soybean and to its progeny. Although respondent might still have contractual remedies against persons with whom it is in privity, any patent protection "would effectively be lost as soon as the first generation of the product was introduced into the market." Br. in Opp. 3; see *Scruggs*, 459 F.3d at 1336 ("Applying the first sale doctrine to subsequent generations of self-replicating technology would eviscerate the rights of the patent holder."). The incentive to invest in innovation and research might well be diminished if the patent term for genetically modified crops was effectively reduced from 20 years to a single year or even a single growing season. Cf. *Diamond* v. *Chakrabarty*, 447 U.S. 303, 307 (1980) ("The patent laws promote * * * progress by offering inventors exclusive rights for a limited period as an incentive for their inventiveness and research efforts."). Congress is better positioned to weigh the interests of biotechnology firms, agricultural workers, and the public, as it presumably did in crafting a limited seed-saving exemption to the PVPA.

Second, the crux of petitioner's theory is that, notwithstanding respondent's right to exclude others from "making" Roundup Ready seed, persons who have acquired such seed through an authorized sale may lawfully create new generations by exploiting the seeds' self-replicating properties. Very few judicial decisions have applied patent-exhaustion principles to self-replicating technologies, and the limited case law in this area has centered on soybeans. If this Court granted certiorari, however, its decision could also affect the enforcement of patents for man-made cell lines, DNA molecules, nanotechnologies, organic computers, and other

technologies that involve self-replicating features. The Court should allow the case law to develop further before considering whether to adopt a more restrictive definition of "making" that could have unforeseen consequences for other present and future self-replicating technologies. Cf. *Bilski* v. *Kappos*, 130 S. Ct. 3218, 3227 (2010) (recognizing that "[t]echnology and other innovations progress in unexpected ways").

CONCLUSION

The petition for a writ of certiorari should be denied.

Respectfully submitted.

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AUGUST 2012

JOINT APPENDIX

No. 11-796

IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, *et al.*,

Respondents.

ON WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

JOINT APPENDIX

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*Claims 20-67 of U.S. Patent No. 5,352,605 were added after Monsanto filed its lawsuit against Mr. Bowman and are therefore not at issue in this case.

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APPENDIX A — RELEVANT DOCKET ENTRIES

RELEVANT DOCKET ENTRIES FROM THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT, NO. 2010-1068

Date Filed	Docket Text
02/11/2011	Brief of Defendant-Appellant Vernon Hugh Bowman
04/14/2011	Brief for Plaintiffs-Appellees Monsanto Company and Monsanto Technology, LLC
05/02/2011	Joint Appendix Filed by Vernon Hugh Bowman
05/02/2011	Reply Brief of Defendant-Appellant Vernon Hugh Bowman

Appendix A

RELEVANT DOCKET ENTRIES FROM THE U.S. DISTRICT COURT SOUTHERN DISTRICT OF INDIANA (TERRE HAUTE) CIVIL DOCKET FOR CASE #: 2:07-CV-00283-RLY-WGH

Date Filed	#	Docket Text
10/12/2007	1	COMPLAINT against VERNON HUGH BOWMAN, filed by MONSANTO COMPANY, MONSANTO TECHNOLOGY LLC. (Attachments: # 1 Exhibit A# 2 Exhibit B PART 1# 3 Exhibit B PART 2# 4 Exhibit B PART 3# 5 Exhibit B PART 4# 6 Exhibit B PART 5# 7 Exhibit B PART 6)(VS) (Entered: 10/15/2007)
12/03/2007	29	*Defendant's* ANSWER to 1 Complaint, filed by VERNON HUGH BOWMAN. (Cummings, L.) (Entered: 12/03/2007)
09/30/2008	62	First MOTION for Summary Judgment *and Memorandum of Law in Support*, filed by Plaintiffs MONSANTO COMPANY, MONSANTO TECHNOLOGY LLC. (Attachments: # 1 Supplement Memorandum of Law in Support,

		# 2 Exhibit Exhibit 2, # 3 Exhibit Exhibit 1, # 4 Exhibit Exhibit 3, # 5 Exhibit Exhibit 4, # 6 Exhibit Exhbit 5, # 7 Exhibit Exhibit 6, # 8 Exhibit Exhibit 7, # 9 Exhibit Exhibit 8)(Sacopulos, Peter) (Entered: 09/30/2008)
11/18/2008	73	RESPONSE in Opposition re 62 First MOTION for Summary Judgment *and Memorandum of Law in Support*, filed by Defendant VERNON HUGH BOWMAN. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4)(NKD) (Entered: 11/18/2008)
12/18/2008	84	REPLY in Support of Motion re 62 First MOTION for Summary Judgment *and Memorandum of Law in Support*, filed by Plaintiffs MONSANTO COMPANY, MONSANTO TECHNOLOGY LLC. (Sacopulos, Peter) (Entered: 12/18/2008)
12/31/2008	85	Surreply re 62 First MOTION for Summary Judgment *and Memorandum of Law in Support*, filed by Defendant VERNON HUGH BOWMAN. (NKD) (Entered: 12/31/2008)

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06/11/2009	93	ORDER DIRECTING FURTHER SUBMISSIONS Plaintiff and Defendant shall each have 30 days from the Entry of this order to supplement the record through the filing of a brief (of no more thatn 20 pages in length) and any exhibits necessary to address the issues and concerns expressed by the court in this Order. Signed by Judge Richard L. Young on 6/11/2009. (DLS) Modified on 6/12/2009 (TLH). (Entered: 06/11/2009)
07/14/2009	96	BRIEF/MEMORANDUM in Support re 62 First MOTION for Summary Judgment *and Memorandum of Law in Support Supplemental Brief*, filed by Plaintiffs MONSANTO COMPANY, MONSANTO TECHNOLOGY LLC. (Sacopulos, Peter) (Entered: 07/14/2009)
07/14/2009	98	RESPONSE to court order requesting further submissions on summary judgment issued on 06/11/09, re 93 Order, filed by Defendant VERNON HUGH BOWMAN. (VS) (Entered: 07/15/2009)
09/02/2009	101	RESPONSE to Plaintiff's Submission on the Inapplicability of the Patent Exhaustion Doctrine to this case, filed by Defendant VERNON HUGH

		BOWMAN. (Attachments: # 1 Letter Office of Commissioner)(NKD) (Entered: 09/02/2009)
09/30/2009	103	ENTRY granting Plaintiff's 62 Motion for Summary Judgment (see Entry). Signed by Judge Richard L. Young on 9/30/2009. (PG) (Entered: 09/30/2009)
09/30/2009	104	FINAL JUDGMENT in favor of Plaintiff and against Defendant. Signed by Judge Richard L. Young on 9/30/2009.(PG) (Entered: 09/30/2009)
10/14/2009	106	MOTION to Amend/Correct 104 Closed Judgment, 103 Order on Motion for Summary Judgment, filed by Plaintiffs MONSANTO COMPANY, MONSANTO TECHNOLOGY LLC. (Sacopulos, Peter) (Entered: 10/14/2009)
10/14/2009	107	BRIEF/MEMORANDUM in Support re 106 MOTION to Amend/Correct 104 Closed Judgment, 103 Order on Motion for Summary Judgment, filed by Plaintiffs MONSANTO COMPANY, MONSANTO TECHNOLOGY LLC. (Sacopulos, Peter) (Entered: 10/14/2009)
10/30/2009	112	NOTICE OF APPEAL as to 104 Closed Judgment, 103 Order on Motion for

		Summary Judgment, filed by Defendant VERNON HUGH BOWMAN. (VS) (Entered: 10/30/2009)
10/30/2009	114	USCA Appeal Fees received $ 455.00 receipt number th 000996 re 112 Notice of Appeal filed by VERNON HUGH BOWMAN (VS) (Entered: 10/30/2009)
11/05/2009	119	RESPONSE in Opposition re 106 MOTION to Amend/Correct 104 Closed Judgment, 103 Order on Motion for Summary Judgment, filed by Defendant VERNON HUGH BOWMAN. (Attachments: # 1 Exhibit 1-3)(VS) (Entered: 11/05/2009)
11/13/2009	122	BRIEF/MEMORANDUM in Support re 106 MOTION to Amend/Correct 104 Closed Judgment, 103 Order on Motion for Summary Judgment *Reply Memorandum in Support of Plaintiff's Rule 59(e) Motion to Alter or Amend Oderd Dated September 30, 2009*, filed by Plaintiffs MONSANTO COMPANY, MONSANTO TECHNOLOGY LLC. (Sacopulos, Peter) (Entered: 11/13/2009)
11/25/2009	125	Surreply to court document 122 filed 11/13/09; re 106 MOTION to Amend/Correct 104 Closed

		Judgment, 103 Order on Motion for Summary Judgment, filed by Defendant VERNON HUGH BOWMAN. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit)(VS) (Entered: 11/25/2009)
12/14/2009	127	ORDER of USCA for the Federal Circuit; ORDERED that the appeal be DEACTIVATED; appeal will be reactivated upon entry of the order disposing of the last such outstanding motion as to 112 Notice of Appeal filed by VERNON HUGH BOWMAN (VS) (Entered: 12/17/2009)
12/15/2009	126	MOTION for relief from judgment issue on 09/30/09, filed by Defendant VERNON HUGH BOWMAN. (VS) (Entered: 12/15/2009)
12/28/2009	128	RESPONSE in Opposition re 126 MOTION *Defendant's Rule 60(b). Motion for Relief from Judgment*, filed by Plaintiffs MONSANTO COMPANY, MONSANTO TECHNOLOGY LLC. (Sacopulos, Peter) (Entered: 12/28/2009)
01/06/2010	129	REPLY in Support of re 126 MOTION (response to plaintiff), filed by Defendant VERNON HUGH

BOWMAN. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2)(NKD) (Entered: 01/06/2010)

05/12/2010 130 ORDER granting plaintiff's 106 Motion to Amend/Correct and denying defendant's 126 Motion for relief from Judgment. Signed by Judge Richard L. Young on 5/12/2010. (TMD) (Entered: 05/12/2010)

05/12/2010 131 AMENDED FINAL JUDGMENT in favor of Plaintiff and against Defendant in the amount of $84,456.30 plus costs and interest from the date of this Amended Final Judgment. In addition, Vernon Hugh Bowman is hereby permanently enjoined from making, using, selling or offering to sell any of Monsanto's patented crop technologies. Signed by Judge Richard L. Young on 5/12/2010.(TMD) (Entered: 05/12/2010)

05/26/2010 133 MOTION to Alter or Amend Court's Order of 5/12/10, filed by Defendant VERNON HUGH BOWMAN. (Attachments: # 1 Exhibits 1-4)(NKD) (Entered: 05/26/2010)

06/01/2010 134 Amendment to defendant's motion to alter or amend court's order of 05/12/10, filed by Defendant VERNON

HUGH BOWMAN. (VS) (Entered: 06/01/2010)

06/01/2010 135 RESPONSE in Opposition re 133 MOTION to Amend/Correct, filed by Plaintiffs MONSANTO COMPANY, MONSANTO TECHNOLOGY LLC. (Sacopulos, Peter) (Entered: 06/01/2010)

06/11/2010 136 ORDER of USCA of the Federal Circuit as to 112 Notice of Appeal filed by VERNON HUGH BOWMAN; ORDERED that appeal be REACTIVATED effective 6/02/10; Informal Brief is due on 6/23/10. (NKD) (Entered: 06/11/2010)

10/29/2010 146 ORDER denying 133 Motion to Amend/ Correct. Signed by Judge Richard L. Young on 10/29/2010. (TMD) (Entered: 10/29/2010)

12/14/2010 148 MOTION for relief from an Order issued on 10/29/10, filed by Defendant VERNON HUGH BOWMAN. (Attachments: # 1 Exhibit 1-7)(NKD) (Entered: 12/14/2010)

12/16/2010 149 Defendant's addition to rule 60 (b-3) motion dated 12/13/10, filed by Defendant VERNON HUGH BOWMAN. (VS) (Entered: 12/16/2010)

Appendix A

12/28/2010	151	RESPONSE in Opposition re 148 MOTION, filed by Plaintiffs MONSANTO COMPANY, MONSANTO TECHNOLOGY LLC. (Sacopulos, Peter) (Entered: 12/28/2010)
01/07/2011	153	ORDER denying 148 Motion to Reconsider. Signed by Judge Richard L. Young on 1/7/2011. (TMD) (Entered: 01/07/2011)

APPENDIX B — COMPLAINT IN THE UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRA HAUTE DIVISION, FILED OCTOBER 12, 2007

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
TERRA HAUTE DIVISION

CASE NO. 2:07-cv-0283 RLY-WGH

MONSANTO COMPANY and MONSANTO TECHNOLOGY, LLC,

Plaintiffs,

vs.

VERNON HUGH BOWMAN,

Defendant.

COMPLAINT

Plaintiffs, Monsanto Company, and Monsanto Technology, LLC (sometimes referred to collectively as "Monsanto"), for their Complaint against Vernon Hugh Bowman (hereinafter "Bowman" or "Defendant") makes the following allegations:

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THE PLAINTIFFS

Monsanto Company

1. Monsanto Company is a company organized and existing under the laws of the State of Delaware with its principal place of business in St. Louis, Missouri. It is authorized to do and is doing business in Indiana and this judicial district.

2. Monsanto Company is in the business of developing, manufacturing, licensing, and selling agricultural biotechnology, agricultural chemicals, and agricultural products. After the investment of substantial time, expense, and expertise, Monsanto Company developed a plant biotechnology that involves the transfer of a gene into crop seed that causes the plant to be resistant to glyphosate-based herbicides such as Roundup Ultra®, Roundup UltraMAX®, Roundup WeatherMAX®, and Touchdown®.

3. This biotechnology has been utilized by Monsanto Company in soybeans. The genetically improved soybeans are marketed by Monsanto Company as Roundup Ready® soybeans.

4. Monsanto's Roundup Ready® biotechnology is protected under United States Patent Numbers 5,352,605 and RE 39,247 E, which are attached hereto as Exhibits "A" and "B". The 5,352,605 and RE 39,247 E patents (commonly referred to as the '605 and '247 patents, respectively) were issued prior to the events giving rise to this action.

5. Monsanto Company is and has been the exclusive licensee of the '605 and '247 patents from Monsanto Technology, LLC.

Monsanto Technology

6. Monsanto Technology, LLC is a company organized and existing under the laws of the State of Delaware with its principal place of business in St. Louis, Missouri.

7. Monsanto Technology, LLC is and has been the owner of the '605 and '247 patents prior to the events giving rise to this action.

THE DEFENDANT

8. Defendant is an individual who resides in Knox County, Indiana at 21488 E State Road 58, Sandborn, IN.

JURISDICTION AND VENUE

9. Subject matter jurisdiction is conferred upon this court pursuant to 28 U.S.C. §1331, in that one or more of Monsanto's claims arise under the laws of the United States, as well as 28 U.S.C. §1338, granting district courts original jurisdiction over any civil action regarding patents.

10. Venue is proper in this district pursuant to 28 U.S.C. §1400 as Defendant resides in this judicial district, and as a substantial number of the events giving rise to

Monsanto's claims of patent infringement occurred within this judicial district.

Defendant's Infringing Activities

11. Defendant farms land in the Indiana County of Knox, upon which he produces soybeans. In 2006, Defendant planted approximately 350 acres of soybeans.

12. Upon information and belief, the Defendant knowingly, willfully and intentionally planted and used saved Roundup Ready® soybeans without authorization from Monsanto in violation of Monsanto's patent rights.

13. Defendant purchased harvested soybean seed from a grain elevator for planting purposes.

14. Defendant planted the soybean seed he purchased from the grain elevator.

15. Defendant applied a weed controlling agent to the soybean fields planted with soybean seed purchased from the grain elevator.

16. The weed controlling agent applied by the defendant contained glyphosate.

17. Defendant harvested seed from plants that survived the weed controlling agent's application on the fields planted with soybean seed purchased from the grain elevator.

Appendix B

18. Defendant retained (saved) a portion of his harvested soybean seed to plant a subsequent (later) crop.

19. Defendant applied a weed controlling agent to the fields planted with soybean seed purchased from the grain elevator with the intention to select for Roundup Ready® soybeans.

COUNT I

PATENT INFRINGEMENT-Patent No. 5,352,605

20. Each and every allegation set forth in the above-numbered paragraphs is hereby incorporated by reference just as if it was explicitly set forth hereunder.

21. On October 4, 1994, the '605 Patent was duly and legally issued to Monsanto for an invention in Chimeric Genes for Transforming Plant Cells Using Viral Promoters, and since that date, Monsanto has been the owner of this patent.

22. Defendant has infringed the '605 Patent by making, using, offering for sale, selling, or importing into the United States Roundup Ready® soybean seed embodying the patented invention without authorization from Monsanto, and will continue to do so unless enjoined by this court.

23. Defendant's actions have damaged Monsanto.

24. Pursuant to 35 U.S.C. § 283, Monsanto is entitled to injunctive relief in accordance with the principles of equity to prevent the infringement of rights secured by its patents.

25. Pursuant to 35 U.S.C. § 284, Monsanto is entitled to damages adequate to compensate for the infringement, although in no event less than a reasonable royalty, together with interest and costs to be taxed to the infringer. Further, on information and belief, damages should be trebled pursuant to 35 U.S.C. § 284 in light of the Defendant's knowing, willful, conscious, and deliberate infringement of the patent rights at issue.

26. The infringing activity of the Defendant brings this cause within the ambit of the exceptional case contemplated by 35 U.S.C. § 285, thus Monsanto requests the award of reasonable attorneys fees and costs.

COUNT II

PATENT INFRINGEMENT-Patent No. RE 39,247 E

27. Each and every allegation set forth in the above-numbered paragraphs is hereby incorporated by reference just as if it was explicitly set forth hereunder.

28. On August 22, 2006, United States Patent Number 5,633,435 was duly and legally reissued to Monsanto as U.S. Patent No. RE 39,247 E. U.S. Patent No. 5,633,435 was initially issued on May 27, 1997. The '247 patent is for an invention of Glyphosate-Tolerant

5-Enolpyruvylshikimate-3-Phospate Synthases. This invention is in the fields of genetic engineering and plant biology.

29. Defendant has infringed Monsanto's patent rights by making, using, offering for sale, selling, importing into the United States, or otherwise transferring Roundup Ready® soybean seed embodying or using the patented invention without authorization from Monsanto, and will continue to do so unless enjoined by this court.

30. Defendant's actions have damaged Monsanto.

31. Pursuant to 35 U.S.C. § 283, Monsanto is entitled to injunctive relief in accordance with the principles of equity to prevent the infringement of rights secured by its patents.

32. Pursuant to 35 U.S.C. § 284, Monsanto is entitled to damages adequate to compensate for the infringement, although in no event less than a reasonable royalty, together with interest and costs to be taxed to the infringer. Further, on information and belief, damages should be trebled pursuant to 35 U.S.C. § 284 in light of the Defendant's knowing, willful, conscious, and deliberate infringement of the patent rights at issue.

33. The infringing activity of the Defendant brings this cause within the ambit of the exceptional case contemplated by 35 U.S.C. § 285, thus Monsanto requests the award of reasonable attorneys fees and costs.

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PRAYER FOR RELIEF

WHEREFORE, Monsanto prays that process and due form of law issue to Defendant requiring him to appear and answer the allegations of this complaint, and that after due proceedings are had, there be judgment in favor of Plaintiffs and against the Defendant, providing the following remedies to Plaintiffs:

A) Entry of judgment for damages, together with interest and costs, to compensate Monsanto for the Defendant's patent infringement;

B) Trebling of damages awarded for the infringement of patents together with reasonable attorney's fees;

C) Entry of an order prohibiting the Defendant from planting infringing articles;

D) Entry of an order prohibiting the Defendant from selling or otherwise transferring infringing articles to a third party:

E) Entry of a permanent injunction against the Defendant to prevent the Defendant from using, saving, cleaning, or planting any of Monsanto's proprietary seed technologies, without express written permission from Monsanto;

F) Entry of judgment for costs, expenses, and reasonable attorney's fees incurred by Monsanto; and

G) Such other relief as the Court may deem appropriate.

Respectfully submitted,

SACOPULOS JOHNSON & SACOPULOS
676 Ohio Street
Terre Haute, Indiana 47807
Telephone: (812) 238-2565
Fax: (812) 238-1945
By: /s/_____
Peter J. Sacopulos, #14403-84

Attorneys for Plaintiffs Monsanto Company and Monsanto Technology, LLC

Appendix B

See Supplemental Appendix for:

Exhibit A to Complaint – U.S. Patent No. 5,352,605

Exhibit B to Complaint – U.S. Patent No. RE 39,247 E

APPENDIX C — EXHIBIT 7 TO MONSANTO'S MEMORANDUM IN SUPPORT OF MOTION FOR EXPEDITED DISCOVERY AND ENTRY OF PROTECTIVE ORDER, FILED OCTOBER 15, 2007

Vernon H. Bowman
R.R. #1 Box 60
Sandborn, Ind 47578
May 5, 1999

Pioneer Hi-Bred International, Inc.
North American Seed Division
Indiana Sales Area
Tipton, IN 46072

Dear Sirs:

I wish to inform Pioneer and Monsanto that I have saved Pioneer 94BO1 Round-Up Ready soybeans for seed. I have been told it is illegal for a farmer to keep R.R. beans for his own seed; but I have never seen a copy of the law preventing this. In order for me to know where I legally stand; I would appreciate both Monsanto and Pioneer sending me a copy of the patent laws that prevent a farmer from saving his own seed from R.R. Beans that were purchased from a company's legal representative.

Should I not receive a copy of the patent laws mentioned above; and or a complaint from either Monsanto or Pioneer by 15 Jun 1999; I will consider it lawful for me to plant, harvest, and sell to a grain elevator the beans produced from the Round-Up seed I saved.

Appendix C

Should it be necessary to pay a technical fee to Monsanto and or Pioneer; please let me know how much it is and where to send the fee.

Sincerely Yours

/s/_____
Vernon H. Bowman

APPENDIX D — DEFENDANT'S ANSWER TO PLAINTIFFS' COMPLAINT IN U.S. DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRE HAUTE DIVISION, FILED DECEMBER 3, 2007

IN U.S. DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
TERRE HAUTE DIVISION

Case Number: 2:07-cv-00283-RLY-WGH

MONSANTO COMPANY AND MONSANTO TECHNOLOGY, LLC,

Plaintiffs,

VS.

VERNON HUGH BOWMAN,

Defendant.

DEFENDANT'S ANSWER TO PLAINTIFFS' COMPLAINT

Defendant, for its answer to Plaintiffs' Complaint, alleges and says:

1. Defendant admits the allegations of Paragraph Number 1.

2. Defendant has insufficient information to either admit or deny the allegations of Paragraph Number 2.

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3. Defendant has insufficient information to either admit or deny the allegations of Paragraphs 3, 4, and 5.

4. Defendant admits the allegations of Paragraph 6.

5. Defendant has insufficient information to either admit or deny the allegations of Paragraph 7.

6. Defendant admits the allegations of Paragraphs 8, 9, and 10.

7. As to Paragraph 11, Defendant admits that he farms land in Knox County and that in 2006 he planted approximately 320 acres of soybeans.

8. Defendant denies the allegations of Paragraph 12.

9. As to Paragraph 13, Defendant admits that he purchased harvested soybeans from a grain elevator and used such soybeans for second crop soybeans.

10. As to Paragraph 14, Defendant admits that he planted the soybeans which he purchased from the grain elevator for second crop soybeans.

11. Defendant admits the allegations of Paragraph 15, except that he purchased harvested soybeans, not soybean seed, and admits Paragraph 16.

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12. As to Paragraph 17, Defendant admits that he harvested the second crop soybeans that survived the weed control agent on the fields planted with soybeans purchased from the grain elevator but denies the other allegations.

13. As to Paragraph 18, Defendant admits that he did not sell all of such harvested soybeans but saved a small portion to plant with harvested soybeans he purchased from a grain elevator for second crop beans but denies all other such allegations.

14. As to Paragraph 19, Defendant admits that he applied a weed controlling agent to the second crop fields he planted with soybeans purchased from the grain elevator for the purpose of controlling weeds.

15. Defendant hereby incorporates its answers to Paragraphs 1 through 19 of Plaintiffs' Complaint.

16. Defendant has insufficient information to either admit or deny the allegations of Paragraph 21.

17. Defendant denies the allegations of Paragraph 22, 23, 24, 25, and 26.

18. Defendant hereby incorporates its answers to Plaintiffs' Paragraphs 1 through 26.

19. Defendant has insufficient information to either admit or deny the allegations of Paragraph 28.

Appendix D

20. Defendant denies the allegations of Paragraphs 29, 30, 31, 32, and 33.

WHEREFORE, Defendant prays the court that Plaintiffs take nothing by reason of its complaint, for its costs, and for all other necessary and proper relief in the premises.

Respectfully submitted,

HartBell, LLC

By: /s/_____

L. Edward Cummings, #3509-42
513 Main Street—P.O. Box 979
Vincennes, Indiana 47591
Telephone: 812-882-8935
Fax: 812-882-9272
Attorney for Defendant

PPENDIX E— SIGNED PIONEER AGREEMENT ATTACHED TO RESPONSE TO PLAINTIFFS' MEMORANDUM, FILED JULY 11, 2008

Pioneer Hi-Bred Technology Agreement

Pioneer Hi-Bred International, Inc.'s Technology Agreement provides you the opportunity to purchase and plant Pioneer® brand products containing or developed with new technologies. This Technology Agreement presently covers Pioneer brand products containing the Roundup Ready® gene in corn and soybeans, Yieldgard® Corn Borer protection in corn, and Herculex® I *Insect Protection* technology in corn.

This Agreement, once signed, will remain in effect until terminated in writing by you or Pioneer. As new information and technologies become available, or if new terms are applicable, we will inform you in writing, at least yearly. Continuing to use the technologies, which are subject to this agreement, is an affirmation and an agreement that you are bound by these and any new terms. All new technology requirements will become incorporated by reference into this master agreement. If you have previously signed a technology agreement with Pioneer, this agreement replaces and terminates any previous agreements.

THIS AGREEMENT PROVIDES YOU:

- A Limited License to purchase and plant Pioneer brand corn and soybean products containing the subject technologies described above. See Bag and Tag for important information, which is incorporated by this reference, regarding License rights and restrictions as well as Limitation of Warranty and Arbitration under state seed laws.

YOU UNDERSTAND:

- The technology provided with the product may include patented subjected matter owned by Pioneer or licensed from a third party. A list of applicable patents is set forth below. These technologies are protected under U.S. patent law.
- These technologies can only be used in locations where the products have been approved for use by all required governmental agencies. See the appropriate Product Use Guide(s) for the applicable technologies for more information on their use.
- Certain grain marketing responsibilities are required for some of these products due to their regulatory status outside of the United States.

YOU AGREE:

- To use the seed containing the subject technology for planting a commercial crop only in a single season.
- To not supply any of this seed to any other person or entity for planting, and not to save any crop produced from this seed for replanting, or supply saved seed to anyone for replanting.
- To not use this seed or its progeny or provide it to anyone for crop breeding, seed production or research (other than to make agronomic comparisons and conduct yield testing).
- To implement an Insect Resistance Management (IRM) program as specified in the appropriate Product Use Guide(s) accompanying your products, if applicable, and to cooperate with Insect Resistance Management programs and research. The IRM program requires planting a non-Bt corn refuge, following EPA-mandated use restrictions as outlined in the appropriate Product Use Guide(s). Please refer to the appropriate Product Use Guide(s), which is supplemental to this Agreement, for specifics related to these terms, including refuge size, distances and management requirements.
  That you are affirming your contractual obligation to follow IRM requirements. Failure to follow IRM requirements can result in the grower losing access to Bt corn for at least one year.
- The IRM requirements set forth in Product Use Guides and referred to in this Agreement supersede the IRM requirements set forth in any previously executed agreement or Product Use Guide.

GENERAL CONDITIONS:

- The Grower's rights may not be transferred to anyone else other than a duly authorized agent of Grower without written consent of Pioneer. If the Grower's rights are transferred with Pioneer's consent or by operation of law, this Agreement is binding on the person or entity receiving the transferred rights.
- If the Grower intentionally breaches this Agreement, in addition to other penalties, the Grower's rights under his Agreement will terminate immediately and the Grower forfeits any right to obtain a license to the subject technology in the future. If the Agreement is terminated, you will no longer have a right under this Agreement to purchase seed containing these technologies. Any obligations that arose before termination will continue in effect.

THIS AGREEMENT IS GOVERNED BY THE LAWS OF THE STATE OF IOWA AND OF THE UNITED STATES. THE PARTIES AGREE TO CONSENT TO THE JURISDICTION OF THE U.S. DISTRICT COURT FOR THE SOUTHERN DISTRICT OF IOWA FOR ALL DISPUTES ARISING UNDER THIS AGREEMENT.

If you have any questions about the subject technology or this agreement, contact your seed provider or call Pioneer at 1 (877) 746-6337. For details of the required Insect Resistance Management program and requirements, see the appropriate Product Use Guide(s). A copy is available from your Pioneer seed provider.

* Licensed or applicable U.S. patents include: **for Pioneer brand corn hybrids and soybeans containing Bt Roundup Ready® gene** — 4,940,835; 5,188,642; 5,352,605; 5,530,196; 5,633,435; 5,717,084; 5,728,925; and 5,804,425; **for Pioneer brand corn hybrids containing Yieldgard® Corn Borer protection** — 5,500,363; 5,352,605; 5,358,142; 5,322,938; 5,164,316; 5,196,525; 5,424,412 and 5,424,200; **for Pioneer brand corn hybrids containing Herculex® I *Insect Protection* technology** — 5,891,308; 5,188,960; 5,538,880; 5,538,877; 5,489,520; 5,650,318; 5,484,956 and 5,919,675.

I, the undersigned Grower, acknowledge that I have read and understand the terms and conditions of this Pioneer Hi-Bred Technology Agreement and that I agree to them. 12/12/07
Date Agreed To

Signature of Grower or Grower's Agent Vernon L Bowman

Grower's Printed Name VERNON L BOWMAN Farmers Identification Number 100-133-732

Address 12676 N. Bowman Rd

City, State, Zip Code SANDBORN, IN 47578

County KNOX

Sales Rep Name Kevin Hammelman Sales Rep Signature Kevin Hammelman

Sales Rep Identification Number 1230060

PIONEER.

PIONEER® brand products are provided subject to the terms and conditions of purchase, which are part of the labeling and purchase documents. ® SM TM Trademarks and service marks, registered or applied for, of Pioneer Hi-Bred International, Inc., Des Moines, Iowa, U.S.A. © 2002 PHI. ‡ Registered Indiana ‡ used under license from Monsanto Company.
Patents and Insect Protection technology by Dow AgroSciences and Pioneer Hi-Bred. Herculex® is a trademark of Dow AgroSciences LLC. REPAGR

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APPENDIX F — MEMORANDUM IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT OF THE UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRE HAUTE DIVISION, FILED SEPTEMBER 30, 2008

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
TERRE HAUTE DIVISION

CASE NO. 2:07-CV-0283 RLY-WGH

MONSANTO COMPANY and MONSANTO TECHNOLOGY, LLC

Plaintiffs,

v.

VERNON HUGH BOWMAN

Defendant.

MEMORANDUM IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

II. STATEMENT OF MATERIAL FACTS NOT IN DISPUTE

A. Monsanto's Patented Roundup Ready® Trait and License Requirements to Use Roundup Ready® Crop Seed.

* * *

Appendix F

10. The Roundup Ready® trait was first commercialized by Monsanto in soybeans in 1996. *Id.* at ¶8.

11. Since its introduction into the marketplace in 1996, Monsanto's Roundup Ready® trait has been, and still is, the only commercially available, glyphosate-tolerant trait in crop seed. *Id.*

12. Monsanto markets Roundup Ready® soybeans under its brands, and it also licenses other seed companies to insert the trait into their own seed varieties and market Roundup Ready® soybeans under their brands. *Id.* at ¶9.

13. All Roundup Ready® soybean seed has been sold to growers pursuant to a limited use license since Roundup Ready® crop seed was introduced in 1996. *Id.*

14. Since introduction into the seed market, all growers have been required to obtain a limited use license to use seed containing the Roundup Ready® trait. *Id.* at ¶10. These licenses permit the grower to use the seed to produce a "single commercial crop." *Id.* The license explicitly prohibits the purchaser from supplying the seed to any other person or entity for the purpose of planting, and from saving harvested seed for use as planting seed for a subsequent crop. *Id.* The license prohibits the use of subsequent generations of the seed for replanting as each new generation of seed contains Monsanto's patented Roundup Ready® genetic trait. *Id.* at ¶10-11 and Exhibit A (to J. Flint Aff.). *See* Deposition of Vernon Hugh Bowman, ("Bowman Depo."), at 56:6-19; 60:14-19, Exhibit 5 (Defendant admits knowledge of Monsanto's restrictions on their patented Roundup Ready® soybeans.).

15. Monsanto has never authorized growers to plant soybeans containing the Roundup Ready® trait that were obtained without a valid license agreement or from an unauthorized dealer, whether they are "commodity soybeans"[3] obtained from a grain elevator or seed produced and saved by another grower. J. Flint Affidavit, at ¶¶9, 13.

16. In compliance with 35 U.S.C. § 287 (a), all seed bags containing Roundup Ready® soybeans have always been marked and continue to be marked with notice that the seed is patented. Specifically, each bag states that the seeds are covered under U.S. Patent Nos. 5,352,605 & RE39,247. *Id.* at ¶12. The limited use licenses under which all Roundup Ready® seed is sold also contains notice that Roundup Ready® soybeans are protected by U.S. Patent Nos. 5,352,605 & RE 39,247. *Id.* at ¶11 and Exhibit A (to J. Flint Aff.).

B. Defendant's Unauthorized Use ofMonsanto's Patented Roundup Ready® Seed.

17. As early as 1999, Defendant purchased commodity soybeans containing the Roundup Ready® trait from a local grain elevator, Huey Soil Service, and used those seeds for planting his own soybean crop. Bowman Depo., at 63:8-19; 64:6-18.

18. From 2000 to 2007, Defendant planted his second crop soybeans with commodity soybeans purchased from a local grain elevator, and soybeans Defendant

3. "Commodity soybeans" refers to harvested seed that has been sold to a seed handler for processing.

had harvested and saved from his prior soybean crops that survived multiple applications of glyphosate-based herbicide. *Id.* at 66:2-67:8; 99:4-101:4.

19. For each of the years 2002, 2003, 2004, 2005, 2006, and 2007, Defendant planted 143.7, 65,77.5, 112.2, 112.1, and 91.8 acres of second crop soybeans, respectively. *Id.* at 70:2-16; FSA Records, Exhibit 8.

20. From 2000 to 2007, Defendant used glyphosate as his primary herbicide for both first and second crop soybeans and glyphosate was the only herbicide Defendant applied to his first and second crop soybeans. Bowman Depo., at 36:21-24; 37:6-38:10; 40:7-12.

21. Defendant admits that he generally made three applications of glyphosate-based herbicide to his first crop soybeans and two applications of glyphosate-based herbicide to his second crop soybeans without crop injury. *Id.*

22. Defendant admits that almost all of the seed he used survived multiple applications of glyphosate, and, therefore, nearly all of the commodity seed obtained from the grain elevator and all the seed he harvested was tolerant to glyphosate and necessarily contained Monsanto's Roundup Ready® trait. *Id.* at 65:8-67:1; 101:8-22; 102:24-103:14.

23. Defendant's second crop planting yielded a significant crop of soybeans that survived the glyphosate-based herbicide application. Defendant's Answer ¶¶9-14; Bowman Depo., at 65:8-67:1.

24. Defendant harvested the soybeans that survived the glyphosate-based weed control agent and retained (saved) a portion of the harvested soybeans to use as seed for planting a subsequent crop of soybeans. Defendant's Answer, at ¶¶12-13; Bowman Depo., at 65:8-67:1.

25. Defendant purchased harvested soybeans from the grain elevator with the desire that all of the soybeans used as seed would be Roundup Ready®. Letter of V. Bowman dated 04/06/2007 ("Bowman 4/06/2007 Letter"), attached as Exhibit 2 to Memorandum in Support of Motion for Expedited Discovery and Entry of a Protective Order, [Docket No. 4], ("Expedited Discovery Motion"); Bowman Depo., at 129:24-130:11. Nearly all of the seed planted by Defendant was Roundup Ready® because a significant soybean crop survived the glyphosate-based herbicide application. Defendant's Answer, at ¶¶12-13; Bowman Depo., at 65:8-67:1; 101:8-22; 102:24-103:14. Defendant, knowing that the soybeans were Roundup Ready®, because those soybeans had survived application of a glyphosate-based herbicide, saved a portion of this soybean crop for seed for future soybean crops. Bowman 4/6/2007 Letter; Bowman Depo., at 101:8-22; 102:24-103:14.

* * *

D. Defendant Knew Since 1999 that His Use of Monsanto's Patented Roundup Ready® Seed Was Unauthorized and Infringed Monsanto's Valid Patent Rights.

* * *

35. Bowman admits that as early as 2000 he was aware of Monsanto's restrictions on Roundup Ready® soybeans, had read the restrictions on Roundup Ready® seed bags, and understood the rights afforded the holder of a U.S. patent. Bowman Depo., at 56:6-19; 60:14-19; 63:20-24; 68:8-22.

36. Aware of the restrictions placed on Monsanto's patented Roundup Ready® seed, Defendant concocted a scheme to obtain a cheap source of Roundup Ready® soybean seed by purchasing commodity soybeans for planting. Bowman Depo., at 119:23-121:1; 126:7-130:11; Letter from V. Bowman, dated 4/6/1999.

37. Defendant followed his scheme each year from at least 2000 to 2007 and saved substantial amounts of money by avoiding payment of Monsanto's license fees for the right to use Monsanto's patented Roundup Ready® soybeans. Bowman Depo., at 89:3-17; 90:12-91:16; 138:24-139:6.

E. In Addition to Defendant's Admitted Knowledge, an Ordinary Indiana Soybean Farmer Knew in at Least 2000 that Planting Saved Roundup Ready® Soybeans Constituted Infringement of Valid Patent Rights.

38. Nearly 94% of Indiana's acres of soybeans planted in 2007 were planted using herbicide resistant varieties. Estimated Damages Report by Dr. Taylor and Dr. Gary Fairchild, ("Damages Report"), at pp. 1-2, Exhibit 6.

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39. The percentage of soybean acreage in Indiana planted to herbicide-tolerant varieties increased each year from 2002 to 2007 (83% to 94%) and nationwide, 91% of all soybean acres were planted with herbicide resistant varieties in 2007. *Id.*

40. All seed bags containing Roundup Ready® soybean seed sold by Monsanto or its seed partners since the product was first introduced in 1996 were marked with notice that the seed was patented. SOF ¶¶10-16. Specifically, each bag stated that the seed was protected by U.S. Patent No. 5,352,605. *Id.* Furthermore, the Monsanto limited use license ("Technology Agreement") explicitly states that growers cannot save seed and cannot acquire seed from anyone other than an authorized dealer.[4] The technology agreement also lists all valid patents that cover the Roundup Ready® seeds, including the '605 patent and '247 patent. *See* Exhibit A (to J. Flint Affidavit).

41. Defendant admits that he has read a Technology Agreement and was aware that he could not acquire Roundup Ready® seed from anyone other than an authorized dealer. Bowman Depo., at 56:6-19; 60:14-19; 63:20-24; 68:8-22.

42. Defendant admits that farmers in Indiana generally knew as early as 2000 that it was a violation of Monsanto's patent rights to save Roundup Ready® seed. Bowman Depo., at 104:5-22; 119:23-121:1.

* * * *

4. Monsanto's no replant policy is a valid exercise of Monsanto's rights under the patent laws. *Monsanto v. Scruggs*, 459 F.3d 1328, 1340 (Fed. Cir. 2006).

APPENDIX G — EXHIBIT 1 TO PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT – AFFIDAVIT OF JERRY FLINT, FILED SEPTEMBER 30, 2008

AFFIDAVIT OF JERRY FLINT

BEFORE ME, the undersigned authority, personally came and appeared:

JERRY FLINT

who first duly sworn, did depose and say:

1. My name is Jerry Flint. I am over the age of 18 years and I am competent to make the statements in this affidavit. The statements that I am making herein are based upon my own personal knowledge and these are the same statements that I would make if I were to testify on the witness stand in court.

2. I am employed by Monsanto Company and currently hold the position of Global Stewardship, Seed Quality and Seed Regulatory Affairs Lead. I have been an employee of Monsanto since December 1989. Prior to my current position, I held the position of Technology Development Lead, Asia Pacific.

3. In my position, I am familiar with Monsanto's Roundup Ready® genetic trait and the DNA components that comprise Monsanto's Roundup Ready® gene. I am familiar with the U.S. Patents on the trait, including U.S. Patent No. 5,352,605. I am also familiar with the licensing

of the Roundup Ready® trait to other seed companies and to growers.

4. After the investment of substantial time, expense and expertise, Monsanto developed a new biotechnology that involves the transfer of a gene into plants, such as soybeans, which allows the plants to express a beneficial trait, such as herbicide tolerance. One of these biotechnologies is the Roundup Ready® genetic trait which is embodied in Roundup Ready® soybeans. The Roundup Ready® trait allows the soybean plants to express resistance to glyphosate-based herbicides, such as Roundup WeatherMAX®.

5. The biotechnology that comprises the Roundup Ready® trait is protected by a number of U.S. patents, including U.S. Patent Nos. 5,352,605 and RE39,247E. The claims of the '605 patent are drawn to a chimeric gene, which is expressed in plant cells, comprising a promoter element, which can be the 35S promoter from Cauliflower Mosaic Virus (CaMV), and a structural sequence which is heterologous with respect to the promoter. The claims of the '247 patent are drawn to the use of a recombinant, double-stranded DNA molecule comprising a promoter functional in plants, a structural DNA sequence encoding an EPSPS enzyme with specified sequences, and a 3' non-translated region that is also functional in plants.

6. All Roundup Ready® soybeans contain the biotechnology disclosed in the '605 and '247 patents. By definition, Roundup Ready® soybeans contain a DNA construct consisting of a promoter DNA sequence, which is

the 35S promoter from Cauliflower Mosaic Virus (CaMV), a chloroplast transit peptide coding sequence, a CP4 EPSPS coding sequence, and a NOS 3' non-translated region (*i.e.*, the "CaMV35S-CP4 construct").

7. The '605 patent was issued and assigned to Monsanto Company in 1994. In 2000, Monsanto Company assigned its entire interest in the '605 patent to Monsanto Technology LLC. The '247 patent was issued and assigned to Monsanto Technology LLC in 2006. Monsanto Technology LLC subsequently granted Monsanto Company an irrevocable, worldwide, exclusive license to practice, make, use, sell, and import the invention, and to grant sublicenses.

8. The Roundup Ready® trait was first commercialized by Monsanto in soybeans in 1996. Since its introduction into the marketplace in 1996, Monsanto's Roundup Ready® trait has been, and still is, the only commercially-available glyphosate-tolerance trait in crop seed.

9. Monsanto markets Roundup Ready® soybeans under its own brands, and it also licenses other seed companies to insert the trait into their own seed varieties and market Roundup Ready® soybeans under their own brands. All Roundup Ready® soybean seed has been sold to growers pursuant to a limited use license since Roundup Ready® crop seed was introduced in 1996.

10. Since introduction into the seed market, all growers have been required to obtain a limited use license

to use seed containing the Roundup Ready® trait. These licenses permit the grower to use the seed to produce a "single commercial crop." The license explicitly prohibits the purchaser from supplying the seed to any other person or entity for the purpose of planting, and from saving harvested seed for use as planting seed for a subsequent crop. In sum, the license prohibits the saving of seed for replanting as each new generation of seed would contain the progeny of Monsanto's Roundup Ready® genetic trait.

11. Copies of the limited use license (also known as "Technology Agreements") offered to growers during the 1998 through 2008 growing seasons are attached hereto as Exhibit A. Each Agreement contains the single commercial crop limitation. These Agreements also prohibit the selling or supplying of saved seed to others for planting. These limitations have been, and continue to be, in every license offered to growers for planting Roundup Ready® soybeans.

12. Monsanto has marked all seed bags of Roundup Ready® soybeans it has sold in the United States from 1996 through the present with the '605 patent. Monsanto has also required all seed companies to whom it has licensed the Roundup Ready® trait to mark all of their seed bags containing Roundup Ready® soybeans with the '605 patent. To the best of my knowledge, all bags of Roundup Ready® soybeans sold in the United States from 1996 to the present have been marked with notice that the seed is covered under U.S. Patent No. 5,352,605.

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13. Monsanto has never authorized growers to plant "brown bag" or "commodity" soybeans containing the Roundup Ready® trait, *i.e.*, saved seed that was produced by another grower.

14. Further Affiant sayeth not.

/s/ Jerry Flint

State of Missouri
County of St. Louis

SWORN TO AND SUBSCRIBED
BEFORE ME, THIS 21 DAY
OF AUGUST, 2008.

/s/
Notary Public

EVELYN COATES
My Commission Expires
September 6, 2008
St. Louis County
Commission #04582552

Appendix G



MONSANTO TECHNOLOGY AGREEMENT

We appreciate your interest in Monsanto's advanced technologies and the exciting benefits they offer. This Monsanto Technology Agreement covers Roundup Ready® cotton, Bollgard® cotton, Bollgard® with Roundup Ready® cotton, Roundup Ready® soybeans, YieldGard® corn and Roundup Ready® corn.

For your convenience, this Agreement remains in effect until either you or Monsanto choose to terminate the Agreement. Once you enroll, information regarding new and existing technologies and any new terms will be mailed to you each year. Additionally, by completing this Agreement, you are automatically enrolled in the Technology Value Package™, designed to bring increased benefits to you.

You Receive:

- Opportunity to purchase and plant seed containing these technologies under this long-term Agreement.
- Opportunity to participate in the Technology Value Package for applicable crop(s).

You Understand:

- These Monsanto gene technologies are protected under U.S. patent law. Monsanto licenses the Grower under applicable patents[1] owned or licensed by Monsanto to use these technologies under the conditions listed below.
- Regulatory approval of grain harvested from seed of Roundup Ready corn is pending in certain export markets and may not be received before the 1998 harvest. As a result, the Grower may be restricted from introducing the

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COTTON ONLY

- To provide, upon request, the locations of all fields planted with Bollgard cotton and to cooperate fully with any inspections.
- To allow Monsanto to inspect all of your fields planted with Bollgard cotton to ensure that you have followed an approved Insect Resistance Management Program. All inspections will be performed at a reasonable time arranged with you in their presence, unless you do not wish to be present. Refer to the Bollgard cotton section of the Product Use Guide for specific instructions regarding refuge requirements.*
- If Monsanto reasonably believes that you have planted saved cottonseed containing a Monsanto genetic trait, Monsanto will request invoices or otherwise confirm that fields in question have been planted with newly purchased seed. If this information is not provided within 30 days, Monsanto may inspect and test all of your cotton fields to determine if saved cottonseed has been replanted. Any inspections will be performed at a reasonable time arranged with you in their presence, unless you do not wish to be present.
- Any technology fees not paid by the net due date will be assessed a late fee of 18% per year (not to exceed the maximum rate allowed by law) on the unpaid principal balance.

YieldGard ONLY

- See the YieldGard corn section of the Product Use Guide for complete details of the required Insect Resistance Management Program.*

General Conditions:

The Grower's rights may not be transferred to anyone else without written consent of Monsanto. If the Grower's rights are transferred with Monsanto's consent or by operation of law, this Agreement is binding on the person or entity receiving the transferred rights.

If the Grower violates the terms of this Agreement, in addition to other remedies available to the technology provider(s), the Grower's rights under this Agreement will terminate immediately and the Grower forfeits any right to obtain an Agreement in the future. The Grower agrees that the technology provider(s) are entitled to recover their full amount of legal fees and other costs of enforcing this Agreement. If the Agreement is terminated, the Grower will no longer have a right under this Agreement to purchase seed containing these technologies; however, any obligations that arose before termination will continue in effect. In the event that the Grower saves, supplies, sells or acquires seed

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MONSANTO TECHNOLOGY AGREEMENT

FARM INFORMATION

Please complete this section with your farm business information. Your name must be filled in and must match the signature below. If you have questions, please call Monsanto at 1-800-623-2333.

❑ Dr. ❑ Mr. ❑ Mrs. ❑ Ms.

Your Name (First/Middle/Last)

Farm Business Name

Mailing Address

City State Zip

Area Code Business Phone Area Code FAX

E-Mail Address

What is your role on the farm? (Check One)

❑ Owner
❑ Owner/Oper.
❑ Operator
❑ Farm Mgr.
❑ Other: _____

CROP INFORMATION FOR THE 1998 GROWING SEASON

Please check (x) each type of seed you are interested in for the 1998 growing season, and fill in the planned acres. This section is NOT a purchase commitment or contract.

		TOTAL Crop Acres Planned for 1998 (All Varieties)		ConTill Acres
❑ Roundup Ready® Soybeans	___,___ acres			
❑ Bollgard® Cotton	___,___ acres			
❑ Roundup Ready Cotton	___,___ acres	Soybeans	___,___ acres	___,___
❑ Bollgard with Roundup Ready Cotton	___,___ acres	Corn	___,___ acres	___,___

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MONSANTO TECHNOLOGY AGREEMENT

We appreciate your interest in Monsanto's advanced technologies and the exciting benefits they offer. This Monsanto Technology Agreement covers Roundup Ready® cotton, Bollgard® cotton, Bollgard® with Roundup Ready® cotton, Roundup Ready® soybeans, YieldGard® corn and Roundup Ready® corn.

For your convenience, this Agreement remains in effect until either you or Monsanto choose to terminate the Agreement. Once you enroll, information regarding new and existing technologies and any new terms will be mailed to you each year. Additionally, by completing this Agreement, you are automatically enrolled in the Technology Value Package™, designed to bring increased benefits to you.

You Receive:

- Opportunity to purchase and plant seed containing these technologies under this long-term Agreement.
- Opportunity to participate in the Technology Value Package for applicable crop(s).

You Understand:

- These Monsanto gene technologies are protected under U.S. patent law. Monsanto licenses the Grower under applicable patents owned or licensed by Monsanto to use these technologies under the conditions listed below.
- Regulatory approval of grain harvested from seed of Roundup Ready corn is pending in certain export markets and may not be received before the 1998 harvest. As a result, the Grower may be restricted from introducing the grain into channels of trade where the potential for export exists. In such cases, the Grower should be prepared to feed the grain on-farm, or sell it for use in domestic markets only.
- YieldGard and Bollgard gene technologies can only be used in locations where the products have been approved for use by all required governmental agencies.

You Agree:

- To use the seed containing Monsanto gene technologies for planting a commercial crop only in a single season.
- To not supply any of this seed to any other person or entity for planting, and to not save any crop produced from this seed for replanting, or supply saved seed to anyone for replanting.
- To not use this seed or provide it to anyone for crop breeding, research, generation of herbicide registration data or seed production.
- If a herbicide containing the same active ingredient as Roundup Ultra® herbicide (or one with a similar mode of action) is used over the top of Roundup Ready crops, you agree to use only Roundup® branded herbicide.
- To pay the applicable Technology Fee for the particular product being purchased.
- To implement an Insect Resistance Management Program specified in the applicable Bollgard cotton and YieldGard corn sections of the Product Use Guide and to cooperate with Insect Resistance Management Programs and research.*

COTTON ONLY

- To provide, upon request, the locations of all fields planted with Bollgard cotton and to cooperate fully with any inspections.
- To allow Monsanto to inspect all of your fields planted with Bollgard cotton to ensure that you have followed an approved Insect Resistance Management Program. All inspections will be performed at a reasonable time arranged with you in their presence, unless you do not wish to be present. Refer to the Bollgard cotton section of the Product Use Guide for specific instructions regarding refuge requirements.*

[illegible] Monsanto will request invoices or otherwise confirm that fields in

APPENDIX H — EXHIBIT 3 TO PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT – AFFIDAVIT OF DR. L. CURTIS HANNAH, UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRE HAUTE DIVISION, FILED SEPTEMBER 30, 2008

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
TERRE HAUTE DIVISION

CASE NO. 2:07-CV-0283 RLY-WGH

MONSANTO COMPANY

Plaintiffs,

v.

VERNON HUGH BOWMAN

infringement against Vernon Hugh Bowman, 12676 North Bowman Road Sandborn, Indiana.

2. My qualifications are as follows. I received a B.S. degree in Biochemistry from Purdue University in 1967, an M.S. degree in Genetics from Purdue University in 1969, and graduate training and a doctorate degree in Genetics from the University of Wisconsin in 1973. Since 1974, I have risen to the rank of Professor at the University of Florida in the Vegetable Crops Department and the Horticultural Sciences Department. For the past 17 years, I have been a Professor of Plant Molecular and Cellular Biology at University of Florida. I have served as the Director of the Graduate Program in Plant Molecular and Cellular Biology and was one of the founding directors of the University of Florida Biotechnology Center. I was twice named a University of Florida Research Foundation Professor and was also named a Distinguished Agricultural Alumnus of Purdue University. My particular research interests include the metabolic processes of corn and in particular the molecular biology involved in starch biosynthesis. I am knowledgeable and skilled in the art of plant molecular biology generally and of mechanisms of gene expression in transgenic plants. My curriculum vita, attached, includes a list of publications authored by me within the preceding 38 years. My hourly compensation is $200/hour. I have not testified in deposition or in trial.

3. In connection with making this report, I have reviewed the patent specifications and claims of U.S. Patent No. 5,352,605 ("the '605 patent") and U.S. Patent No RE39,247E ("the '247 patent"). I have also reviewed data of three types: (i) polymerase chain reaction (PCR)

data, (ii) DNA sequence data, and (iii) enzyme linked immunosorbent assay (ELISA) data. ELISA data were provided by Biolab Solutions. PCR and DNA sequence data were provided by Monsanto Company. These data were derived from soybeans I am informed were obtained from fields farmed by Mr. Bowman as well as from farm equipment used by Mr. Bowman. I have also reviewed the DNA sequence of the recombinant, chimeric or man-made gene that was used to create Monsanto's Roundup Ready® soybeans and the amino acid sequence of the enolpyruvylshikimate-3-phosphate synthase (EPSPS) enzyme encoded by this gene. In addition, I have reviewed Monsanto's "Petition for Determination of Nonregulated Status: Soybean's with a Roundup Ready™ Gene" and Padgette *et al.* (1995) "Development, Identification, and Characterization of a Glyphosate-Tolerant Soybean Line" *Crop Sci.* 35:1451-1461, which describe the gene in Monsanto's Roundup Ready® soybean.

TUTORIAL ON GENETIC CONCEPTS

4. In the paragraphs that follow, I provide some information on genetic concepts that will help in understanding the claims of the '605 and '247 patents as well as Monsanto's patented technology. These concepts relate mainly to the structure and function of the regulatory DNA and coding sequences in the claimed gene or DNA.

5. DNA, or deoxyribonucleic acid, makes up the genetic material of all cells. DNA is composed of two long complementary chains. Each chain is composed of

"deoxyribonucleotides." The two strands of the DNA molecule twist around each other in a double helical fashion. Discrete sequences are arranged along the double-stranded DNA helix which "encode" the proteins of the cell, including enzymes. By a series of complex steps, the cell's enzymatic machinery is capable of "reading" these protein coding sequences to produce the encoded proteins.

6. The first step in the process of producing a protein from its DNA coding sequence is "transcription" of the DNA molecule to generate a molecule of RNA, or ribonucleic acid. RNA is a single-stranded molecule, composed of nucleotides, which is produced by specific enzymes in the cell using one of the strands of the DNA as a template. The RNA sequence produced in this way is called "messenger RNA" because it will be used as a "message" to make a specific protein. Each specific protein coding sequence on the DNA codes for a specific messenger RNA, which in turn encodes a specific protein. The two ends of a piece of RNA are referred to as the "5' end" and the "3' end." The 5' end of an RNA encoding a protein is the end closest to where the coding region starts. The 3' end is closest to where the coding region ends.

7. RNA is inherently unstable in the cell due to the presence of specific enzymes that degrade RNA. For this reason, the cell has enzymes that selectively modify different RNA molecules to differentially regulate their stability. One of the ways the cell does this is to add a long repetitive stretch of a nucleotide called adenine to the 3' end of the RNA. This process is called "polyadenylation"

and the added nucleotides are often referred to as "polyadenyl nucleotides." After the RNA is processed in this way, it can be used as a template by the cell's machinery to make a protein.

8. The production of a protein using the RNA as a template is called "translation." Proteins are chains of amino acids that fold up into a functional structure as they are translated. The first amino acid in the sequence of a protein is referred to as the "amino-terminal end" and the last amino acid is the "carboxy-terminal end."

9. In order for a protein coding sequence to function in a plant cell to make a protein, the sequence must first be assembled with two different regulatory DNA sequences. The first of these sequences is a regulatory sequence called a "promoter." A promoter is a DNA control sequence that regulates the production of an RNA from a DNA coding sequence. Promoter sequences to be used in plants can, for example, be derived from plant genes or from the genes of plant viruses. One such plant virus is the cauliflower mosaic virus, which is abbreviated "CaMV." One of the promoters from CaMV is the CaMV35S promoter. This is the promoter used in Monsanto's Roundup Ready® soybeans.

10. The second control sequence typically necessary for the production of a protein in a plant cell is referred to as a "3' non-translated region." As its name implies, it is a region of the DNA that corresponds to the 3' end of the RNA and it is not part of the region from which the protein is translated. The function of the 3' non-translated region

in a plant cell is to regulate the addition of polyadenyl nucleotides to the 3' end of the RNA sequence. The 3' non-translated region used in Monsanto's Roundup Ready® soybeans comes from the nopaline synthase (NOS) gene of the bacterium *Agrobacterium tumefaciens*. This gene does not naturally occur in soybean plants.

11. In order for an EPSPS enzyme to function in plant cells once it is produced, it must make its way into a structure within the plant cell called a "chloroplast." The endogenous plant EPSPS enzyme is able to traverse the membrane of the chloroplast because it has a specific sequence called a "chloroplast transit peptide" attached to the amino terminal end of the protein. Unlike the plant EPSPS enzyme, Monsanto's CP4 EPSPS enzyme does not naturally have a chloroplast transit peptide. Therefore, to facilitate the transmission of the CP4 EPSPS enzyme into the chloroplast, Monsanto engineered the DNA in the Roundup Ready® technology to include a chloroplast transit peptide coding sequence inserted at the 5' end of the CP4 EPSPS coding sequence.

THE MONSANTO ROUNDUP READY® TECHNOLOGY

12. I have requested, obtained, and reviewed the DNA sequence of Monsanto's Roundup Ready® gene and the amino acid sequence of the protein it expresses. The DNA sequence information I reviewed includes the complete DNA sequence of the chimeric gene used to generate Roundup Ready® soybeans. The amino acid sequence information includes the complete amino acid sequence of the CP4 EPSPS enzyme produced in the Roundup

Ready® soybeans. Monsanto's CP4 EPSPS enzyme is from a bacterial strain called *Agrobacterium tumefaciens* CP4. Monsanto's Roundup Ready® gene is a recombinant, double-stranded DNA molecule consisting of a CaMV35S promoter, a chloroplast transit peptide coding sequence, a CP4 EPSPS coding sequence, and a NOS 3' non-translated region. This DNA molecule present in Monsanto's Roundup Ready® soybeans causes plant cells to produce the CP4 EPSPS enzyme, rendering them resistant to Roundup® herbicide. For the sake of simplicity, I will hereinafter refer to Monsanto's DNA molecule as the "CaMV35S-CP4 construct."

SOYBEANS FROM MR. BOWMAN'S FIELDS AND EQUIPMENT.

13. Soybean samples obtained from Bowman's fields and equipment were tested and the data from those tests were provided to me for analysis. The data made available to me for review are of three sorts: polymerase chain reaction (PCR) data to detect the engineered CaMV35S-CP4 construct, provided by Monsanto Company, DNA sequence data of the PCR products, provided by Monsanto Company and enzyme linked immunosorbent assay (ELISA) data to detect the CP4 EPSPS enzyme, provided by Biolab Solutions.

14. Importantly, the PCR and DNA sequencing tests and the ELISA test are independent tests. The PCR and sequencing tests detect the presence of the man-made *gene* in question while the ELISA test detects the *protein* arising from the gene. Taking all the data into

consideration, it is my opinion that soybeans obtained from Mr. Bowman's fields and equipment are Roundup Ready® soybeans.

15. The ELISA test was used to detect the protein, the CP4 EPSPS enzyme arising from the CaMV35S-CP4 construct. The CaMV35S-CP4 construct was engineered and inserted by Monsanto to create the Monsanto's Roundup Ready® soybeans. If the construct containing the CP4 gene is present and the CP4 gene is expressed, then CP4 EPSPS enzyme should be detected. The ELISA test used requires that two separate antibodies recognize the CP4 EPSPS enzyme in order to obtain a positive signal. This makes the test extremely sensitive and extremely specific for the CP4 EPSPS enzyme. This test detected the CaMV35S-CP4 construct in Bowman's soybeans. Since this gene is not present in conventional soybeans, it is my opinion that soybeans obtained and subsequently tested from Bowman's fields and equipment are Roundup Ready® soybeans.

16. In total, five sets of oligonucleotide DNA primer pairs were used by Monsanto in the PCR tests to detect the CaMV35S-CP4 construct. The primers amplify the DNA sequence constructed and inserted by Monsanto. In these experiments, if the CaMV35S-CP4 construct is present and the DNA is of sufficient quality, the primers anneal, or hybridize, to the gene construct within the soybean DNA. This then allows for DNA synthesis in the next phase of the PCR reaction. Subsequent cycles of PCR then amplify the construct, leading eventually to a DNA product detectable by a technique called gel electrophoresis. The synthesis

of the DNA was also measured by a technique called Taqman PCR. The DNA product produced as a result of this process is delimited by and includes the sequences of the primers. In addition, a primer set was included to detect a gene found in transgenic as well as conventional soybeans. These tests detected the CaMV35S-CP4 construct in Bowman's soybeans. Since this gene is not present in conventional soybeans, it is again my opinion that soybeans obtained and subsequently tested from Bowman's fields and equipment are Roundup Ready® soybeans.

17. The ELISA data were derived from 39 soybean samples from the Bowman farming operation. Samples came from eight separate fields as well as from a combine, trucks and a wagon. Each sample was analyzed in triplicate. All samples proved positive by this test.

18. Eight soybean samples from the Bowman farming operation were tested by the PCR test. Non-transgenic soybeans and authentic Monsanto Roundup Ready® soybeans as well as anonymous negative and positive samples were included as negative and positive controls. All Bowman samples proved positive by both Taqman and the four independent conventional PCR tests. Results from conventional as well as Taqman PCR reactions were totally congruent with the ELISA results.

19. Each of the positive samples produced the DNA fragments of the predicted sizes arising from authentic Roundup Ready® soybeans. The fragments were also produced in the authentic positive controls and were

not produced when DNA from the conventional soybean samples was analyzed.

20. The third test performed on the Bowman soybean samples was DNA sequencing. In this procedure, the DNA sequences of three PCR products from two different fields farmed by Bowman and from a truck used by Bowman were determined. The resulting DNA sequences as well as the sequence of the corresponding PCR product from an authentic Monsanto Roundup Ready® soybean were provided to me. These data show the presence of Monsanto's chimeric CaMV35S-CP4 construct, including a 35S CaMV promoter, a chloroplast transit peptide, and an EPSPS enzyme coding sequence in the three samples from Mr. Bowman's farming operation.

21. Three scientific facts lead me to the conclusion that Monsanto's engineered CP4 EPSPS construct is present in Bowman's soybean samples. First, the CP4 EPSPS enzyme protein is detected in these soybean samples. Detection of the CP4 EPSPS protein requires that the gene encoding the CP4 EPSPS enzyme be expressed in the soybean plants. This requires a functional DNA gene promoter, coding region and signals for proper termination of transcription and processing of the RNA. These termination signals would include a 3' non-translated region that functions in the soybean cells to cause the addition of polyadenyl nucleotides of the 3' end of the RNA sequence. Second, the PCR data demonstrate the presence of the CaMV3S promoter and coding regions for a chloroplast transit peptide and the CP4 EPSPS enzyme. Third, sequencing of the PCR products from Bowman's

soybean seeds shows that the PCR products were derived from Monsanto's Roundup Ready® gene. Since these DNA sequences would only be present in soybeans containing biotechnology engineered by Monsanto, it is my opinion, therefore, that the soybean seeds sampled and tested from Bowman's farming operations contain Monsanto's Roundup Ready® gene.

THE CLAIMS OF THE '247 AND '605 PATENTS

22. The claims of the '247 patent concern the use of a recombinant, double-stranded DNA molecule comprising a promoter functional in plants, a structural DNA sequence encoding an EPSPS enzyme with specified sequences, and a 3' non-translated region that is also functional in plants. The claims of the '605 patent concern a chimeric gene, which is expressed in plant cells, comprising a promoter element, which can be a 35S promoter from CaMV, and a structural sequence which is heterologous with respect to the promoter.

23. As discussed above, I am familiar with the DNA sequence of Monsanto's Roundup Ready® gene and the amino acid sequence of the protein it expresses. I have been asked to examine certain claims, listed and detailed below, of the '247 and '605 patents. Based upon a comparison of the sequence information and the evidence presented to me with the particular claims of the '247 and '605 patents, I have concluded that the Bowman soybeans, which contain the Roundup Ready® gene, are covered by at least claims 102, 103, 104, 105, 106, 107, 108, 115, 116, 117, 119, 122, 123, 125, 128, 129 and 130 of the '247 patent

and at least claims 1, 2, 4, and 5 of the '605 patent. For the sake of simplicity, I limit my analysis to these claims, even though it is my opinion that a number of other claims of these patents are also likely infringed.

The '247 patent covers the novel CaMV35S-CP4 construct present in Monsanto's Roundup Ready® soybeans and therefore also covers the Bowman soybeans.

24. The samples obtained from Bowman meet the criteria of claims 102, 103, 104, 105, 106, 107, 108, 115, 116, 117, 119, 122, 123, 125, 128, 129 and 130 of the '247 patent. These claims read as follows:

> 102. An isolated DNA molecule that encodes a 5-enolpyruvylshikimate-3-phosphate synthase (EPSPS) enzyme having the sequence of SEQ ID NO:70.
>
> 103. A recombinant, double-stranded DNA molecule comprising in sequence:
>
> a) a promoter which functions in plant cells to cause the production of an RNA sequence;
>
> b) a structural DNA sequence that causes the production of an RNA sequence which encodes an EPSPS enzyme having the sequence of SEQ ID N0:70; and
>
> c) a 3' non-translated region that functions in plant cells to cause the addition of a stretch

of polyadenyl nucleotides to the 3' end of the RNA sequence; where the promoter is heterologous with respect to the structural DNA sequence and adapted to cause sufficient expression of the encoded EPSPS enzyme to enhance the glyphosate tolerance of a plant cell transformed with the DNA molecule.

104. The DNA molecule of claim 103, wherein the structural DNA sequence further causes the production of an RNA sequence that encodes an amino-terminal chloroplast transit peptide that is fused to the EPSPS enzyme.

105. The DNA molecule of claim 104, wherein the chloroplast transit peptide has the sequence of SEQ ID NO: 11 or SEQ ID NO:15.

106. The DNA molecule of claim 103, wherein the promoter is a plant DNA virus promoter.

107. The DNA molecule of claim 106, wherein the promoter is a CaMV35S promoter or an FMV35S promoter.

108. The DNA molecule of claim 103, wherein the 3' non-translated region is a NOS 3' or an E93' non-translated region.

115. A glyphosate-tolerant plant cell comprising a DNA sequence encoding an EPSPS enzyme having the sequence of SEQ ID NO: 70.

Appendix H

116. A glyphosate-tolerant plant comprising a DNA sequence encoding an EPSPS enzyme having the sequence of SEQ ID NO: 70.

117. The plant of claim 116, wherein the plant is corn, wheat, rice, barley, soybean, cotton, sugarbeet, oilseed rape, canola, flax, sunflower, potato, tobacco, tomato, alfalfa, poplar, pine, eucalyptus, apple, lettuce, peas, lentils, grape or turf grasses.

119. The plant of claim 117, wherein the plant is soybean.

122. A seed of the plant of claim 116, wherein the seed comprises the DNA sequence encoding an EPSPS enzyme having the sequence of SEQ ID NO: 70.

123. The seed of claim 122, wherein the seed is corn, wheat, rice, barley, soybean, cotton, sugarbeet, oilseed rape, canola, flax, sunflower, potato, tobacco, tomato, alfalfa, poplar, pine, eucalyptus, apple, lettuce, peas, lentils, grape or turf grass seed.

125. The seed of claim 123, wherein the seed is soybean seed.

128. A glyphosate tolerant plant cell comprising the recombinant DNA molecule of claim 103.

Appendix II

129. A plant comprising the glyphosate tolerant plant cell of claim 128.

130. A method for selectively controlling weeds in a field containing a crop having planted crop seeds or plants comprising the steps of:

a) planting the crop seeds or plants which are glyphosate-tolerant as a result of a recombinant double-stranded DNA molecule being inserted into the crop seed or plant, the DNA molecule having:

> i) a promoter which functions in plant cells to cause the production of an RNA sequence,
>
> ii) a structural DNA sequence that causes the production of an RNA sequence which encodes an EPSPS enzyme having the sequence of SEQ ID N0:70; and iii) a 3' non-translated DNA sequence which functions in plant cells to cause the addition of a stretch of polyadenyl nucleotides to the 3' end of the RNA sequence,

where the promoter is heterologous with respect to the structural DNA sequence and adapted to cause sufficient expression of the EPSPS enzyme to enhance the glyphosate tolerance of the crop plant transformed with the DNA molecule; and

b) applying to the crop and weeds in the field a sufficient amount of glyphosate herbicide to control the weeds without significantly affecting the crop.

25. The DNA of claim 102 describes the coding information for the EPSPS enzyme found in Monsanto's patented technology. Claim 103 comprises, in sequence, a plant-functional promoter, a DNA sequence that functions to produce an EPSPS enzyme of specific sequence and a 3' non-translated region and further requires that the promoter be heterologous to the coding sequence and that the gene express a protein that renders plant cells tolerant to glyphosate. Claim 104 further specifies that a sequence encoding an amino-terminal chloroplast transit peptide is present in the gene construct. Claim 105 specifies particular chloroplast transit peptides that can be included in the gene. Claim 106 specifies that the promoter for the gene be of plant DNA virus origin and claim 107 further specifies the identity of the promoter. The origin of the 3' non-translated region of the gene construct is specified in claim 108. Claim 115 claims a glyphosate-tolerant plant cell having the specified EPSPS enzyme of claim 102. Claim 116 further indicates that the plant cells can be part of a glyphosate tolerant plant. Claim 117 specifies particular plant species, including soybean and claim 119 specifies the plant species to be soybean. Claim 122 specifies seed arising from such modified plants and claim 123 references seeds of particular plant species containing the gene for the specified EPSPS enzyme. Claim 125 specifically states soybean seed arising from progeny of such modified plants. Claim 128 references a plant cell containing the CaMV35S-CP4 construct which includes

a promoter, the transit peptide and the 3 non-translated region and claim 129 claims a plant with the above-mentioned gene construct. Claim 130 specifies a method for selectively controlling weeds with the CaMV35S-CP4 construct.

26. It is my opinion that the soybean plants obtained from the fields and equipment operated by Mr. Bowman meet all the criteria of these claims. My conclusions are based upon the following facts. Monsanto's CaMV35S-CP4 construct, which is present in the Bowman soybean samples, is a recombinant, double-stranded DNA molecule. As I indicated previously, the PCR tests and the DNA sequence data demonstrate the presence of a CaMV35S promoter, which is known to be functional in plant cells. In addition, the presence of the CP4 EPSPS protein, as shown by the ELISA test, demonstrates that the promoter is functioning to produce an RNA sequence which is then translated into a protein, thus meeting the first criterion, 'criterion a' of claim 103. My review of the amino acid and nucleotide sequence of Monsanto's CaMV35S-CP4 construct further establishes that the second criterion, 'criterion b', of this claim is met as well. As indicated above, and as shown by the sequence information from Monsanto's CaMV35S-CP4 construct, and further verified by the presence of CP4 EPSPS protein in the samples analyzed and by the DNA sequence analysis, the CaMV35S-CP4 construct also contains a 3' non-translated region which functions in plant cells to cause the addition of a stretch of polyadenyl nucleotides to the 3'end of the RNA sequence. The promoter, which was derived from CaMV, is heterologous to the CP4 gene, which was derived

from an *Agrobacterium*. Further, Monsanto's CaMV35S-CP4 construct present in the Roundup Ready® soybean product expresses levels of EPSPS enzyme sufficient to enhance glyphosate tolerance in plant cells. Moreover, the ELISA tests unequivocally demonstrate that the EPSPS enzyme is expressed in the Bowman's samples. Therefore, in my opinion, all of the criteria listed in claim 103 of the '247 patent are present in the soybean samples collected from the fields and equipment farmed and used by Mr. Bowman.

27. Claim 104 further requires that the DNA sequence encode a fusion polypeptide comprising an amino-terminal chloroplast transit peptide and the EPSPS enzyme. As evidenced by the sequence analysis of the PCR product, this requirement is also met by the Bowman soybean samples. The amino acid sequence encoded by this region is present as set forth in claim 105, SEQ ID NO:15, further demonstrating that claim 105 also covers the DNA molecule in the Bowman soybean samples.

28. Claim 102 specifies particular amino acids in the EPSPS coding sequence, all of which are present in Monsanto's CaMV35S-CP4 construct, and in the Bowman soybeans. The criteria of claims, 106, 107, 108, 115, 116, 117, 119,122, 123, 125, 128, and 129 are also met, since the gene is present in soybean plants being used by Bowman. The criteria of claim 130 of the '247 patent are met when plants derived from saved seed containing Monsanto's patent technology are sprayed with a glyphosate-based herbicide.

Appendix H

THE CLAIMS OF THE '605 PATENTS

29. The claims of the '605 patent concern a chimeric gene, which is expressed in plant cells, comprising a promoter element, which can be a 35S promoter from CaMV, and a structural sequence which is heterologous with respect to the promoter.

30. As discussed above, I have asked for and obtained the DNA sequence of Monsanto's Roundup Ready® gene and the amino acid sequence of the protein it expresses. I have also been asked to examine claims 1, 2, 4, and 5 of the '605 patent. Based upon a comparison of the scientific data with the claims of the '605 patent, I have concluded that the Bowman soybeans, which contain the Roundup Ready® gene, are covered by at least claims 1, 2, 4, and 5 of the '605 patent.

The '605 patent covers Monsanto's Roundup Ready® soybeans and therefore also covers the Bowman soybeans.

31. I conclude that the soybeans obtained from Bowman meet the criteria of claims 1, 2, 4, and 5 of the '605 patent. These claims read as follows:

> 1. A chimeric gene which is expressed in plant cells comprising a promoter from a cauliflower mosaic virus, said promoter selected from the group consisting of a CaMV (35S) promoter isolated from CaMV protein-encoding DNA sequences and a CaMV (19S) promoter isolated

from CaMV protein-encoding DNA sequences, and a structural sequence which is heterologous with respect to the promoter.

2. A chimeric gene of claim 1 in which the promoter is the CaMV(35S) promoter.

4. A plant cell which comprises a chimeric gene that contains a promoter from cauliflower mosaic virus, said promoter selected from the group consisting of a CaMV (35S) promoter and a CaMV (19S) promoter, wherein said promoter is isolated from CaMV protein-encoding DNA sequences, and a structural sequence which is heterologous with respect to the promoter.

5. A plant cell of claim 4 in which the promoter is the CaMV(35S) promoter.

32. These claims are broadly directed to a chimeric gene, which is expressed in plant cells, comprising a promoter element, which can be a 35S promoter, and a structural sequence that is heterologous with respect to the promoter. Claim 4 of the '605 patent relates to plant cells which contain such a chimeric gene. The term "chimeric gene" merely relates to the fact that the gene is comprised of parts that do not occur together in nature, such as the CaMV35S promoter element and the structural sequence of interest, e.g., a structural sequence encoding a CP4 EPSPS enzyme; hence, the structural sequence is heterologous with respect to the promoter. The language relating to the promoter being isolated

from CaMV protein encoding sequences relates to the fact that the promoter is employed to drive expression of a heterologous structural sequence of interest rather than to drive expression of CaMV viral protein as it does in the CaMV virus.

33. It is my opinion that the soybeans obtained from Bowman's fields and equipment meet all the criteria of claims 1, 2, 4, and 5 of the '605 patent because the cells of these plants contain a chimeric gene in which the CaMV35S promoter drives expression of a CP4 EPSPS structural sequence. As discussed above, the CP4 EPSPS sequence is heterologous with respect to the CaMV35S promoter. Therefore it is my opinion that Vernon Hugh Bowman, 12676 North Bowman Road, Road Sandborn, Indiana has infringed claims 1, 2, 4, and 5 of the '605 patent and claims 102, 103, 104, 105, 106, 107, 108, 115, 116, 117, 119, 122, 123, 125, 128, 129 and 130 of the '247 to the extent the soybeans were planted without authority.

Further Affiant sayeth not.

/s/_____
L. Curtis Hannah, Ph.D.

SWORN TO AND SUBSCRIBED
BEFORE ME, NOTARY, THIS
15 DAY OF AUGUST, 2008.

/s/ Cynthia M. Olejownik
NOTARY PUBLIC

APPENDIX I — EXHIBIT 4 TO PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT – AFFIDAVIT OF DR. FRITZ KOPPATSCHEK, FILED SEPTEMBER 30, 2008

AFFIDAVIT OF DR. FRITZ KOPPATSCHEK

BEFORE ME, the undersigned authority, personally came and appeared:

DR. FRITZ KOPPATSCHEK

who first duly sworn, did depose and say:

1. My name is Dr. Fritz Koppatschek. I am over the age of 18 years and I am a resident of the state of Indiana. I am of sound mind. I am the director of Agricultural Sampling Services located in Indianapolis, Indiana. I have a Bachelor of Science degree in Agronomy from Ohio State University (1983) and a Masters of Science degree in Agronomy from the University of Illinois (1987). I received a Ph.D. in Agronomy from the University of Illinois in 1989. The statements that I am making in this Affidavit are from my own personal, first-hand knowledge. I am competent to make the statements in this Affidavit and these are the same statements that I would make if I were called as a witness to testify in court in this matter.

2. I have been retained by the law firm of Thompson Coburn LLP as an expert witness to conduct inspections of the soybean fields of Vernon Hugh Bowman, to collect samples of soybean plant tissue from those fields, and to observe the agronomic practices used by Bowman in his fields. I have been asked to make this affidavit in support of Monsanto's lawsuit for patent infringement against

Bowman. The facts and opinions in this affidavit are based upon my personal observation of Bowman's fields, my experience in conducting field inspections and collecting crop samples, my experience in fanning numerous crops (soybeans, cotton, corn, etc.), my experience in agricultural field research, and my experience as a crop consultant.

3. On November 2, 2007 I led a field inspection and sampling team to conduct the inspection of Bowman's farms in Knox County, Indiana. The purpose of our inspection was to inspect the crop stubble remaining from Bowman's 2007 soybean crop, to calculate plant populations, and to collect samples of the soybean crop (plant and seed tissue) in Bowman's fields. We were able to locate suitable plant tissue from every field for testing purposes. My team consisted of Shawn Bainbridge, Jared Alsdorf, Jay Deweese, Marc Roberts, and myself.

4. Mr. Vernon Bowman was present during the field inspection and identified his soybean fields to my field inspection team.

5. My field inspection team sampled 8 soybean fields. According to Bowman's Farm Service Agency records, these fields totaled 299.1 soybean acres. The inspection team also collected samples from 7 farm implements. The Truck 1 Red 142K, Truck 2 Gravity 2930D, Truck 3 Green 1750, and Combine John Deere 7700 were located in a barn at 12676 N Bowman Road, Sandborn, Indiana 47578. The Gravity 1, Big 12, and IH Truck were located in a building at 21488 E State Road 58, Sandborn, Indiana 47578. I labeled each of these fields numerically and correlated each field to the Farm Service Agency's Identifiers as follows:

Appendix I

Ag Sampling Service Field #	# of samples taken	FSA Farm #	FSA Tract #	# Acres
1	6	1081	3228	30.0
2	3	1081	3228	4.0
3	10	1081	1868	50.3
4	7	1081	1867	35.2
5	11	777,1081	1743,1869	47.8
6	11	4328	11218	51.8
7	6	4328	11218	29.5
8	8	4329	11220	50.5
Truck 1 Red 142K	2			
Truck 2 Gravity 2930D	2			
Truck 3 Green 175D	2			
Combine John Deere 7700	2			
Gravity 1	2			
Big 12	2			
IH Truck	2			

6. All of the samples that were collected from Bowman's fields and equipment were stored and locked in

the Ag Sampling trailer. Samples were then transferred to BioLab Solutions for ELISA analysis.

7. ELISA is an immunoassay methodology used to analyze for the CP4 EPSPS protein. If the sample tests positive for the CP4 EPSPS protein, the sample is Roundup Ready®.

8. BioLab Solutions provided the analytical results of the samples collected from defendant's soybean fields and farm implements to me. The report from BioLab Solutions is attached as Exhibit "A" to my affidavit.

9. I have reviewed the expert report of Dr. L. Curtis Hannah in which he analyzed the results of three tests that were conducted on the samples that my field inspection team collected. Dr. Hannah's report indicated that every field tested positive for the Roundup Ready trait.

10. Approximately 8 fields totaling 299.1 acres were sampled. A total of 62 field samples and 14 soybean samples collected from Bowman's farm implements were analyzed for the CP4 EPSPS protein associated with the Roundup Ready® gene. All samples tested were positive for the presence of the CP4 EPSPS protein. Accordingly, Ag Sampling Service Field Nos. 1, 2, 3, 4, 5, 6, 7, and 8 tested positive for the Roundup Ready gene. These fields total 299.1 acres of soybeans.

11. Based upon the inspection and sampling of Bowman's 2007 soybean fields and the results of the testing of those samples, Bowman planted Roundup Ready soybeans in Ag Sampling Service Field Nos. 1-8.

These fields total 299.1 soybean acres in 2007 according to Bowman's FSA records.

12. I also estimated the planting rate used by Mr. Bowman to plant his 2007 soybean crop to be 85.4 pounds per acre. This planting rate was determined by making plant counts in two fields. Plant populations were based on the average number of plants per 28 inch hoop on soybeans planted on a 7.5 inch row. My calculations assumed that there were 3000 seed per pound and also assumed 80% seedling survival. My assumptions favored Mr. Bowman. The method I used to estimate the planting rate is accepted by other agronomists and is commonly used in the industry.

Further Affiant sayeth not.

/s/_____
DR. FRITZ KOPPATSCHEK

State of Indiana
County of Marion

SWORN TO AND SUBSCRIBED
BEFORE ME, THIS 24 DAY
OF SEPTEMBER, 2008.

/s/_____
Notary Public

Commission Expires: 7/8/2015
County of Residence: Marion
Printed Name: Therese A. Rivers

Appendix I

CONFIDENTIAL

LAB REPORT

ELISA Analysis for CP4 EPSPS
Project Number: 10791-07-09
Grower: Bowman (IN)
Report Date: June 5, 2007

Sample Characteristics

Sampled By: Ag Sampling Services
Lab Received Date: 05-November-2007
Crop: Soybean
Tissue Type: Seed
Laboratory Analyst: Allison Gast
Extractions: Allison Gast
Lab Extraction Date(s): 11-Nov-2007
ELISA Analysis Date(s): 12-Nov-2007

Sample Numbers

Sample numbers are assigned by Ag Sampling Services and labeled according to the following format:

Field # - Sample #

Summary of Sample Preparation and Extraction For CP4 EPSPS ELISA Analysis

Soybean Seed Sample Preparation & Extraction
The extraction was performed as described in SOP ANA 01: "Procedure for Extraction and ELISA Analysis of CP4

EPSPS in Soybean Tissue." Seed samples were stored at ambient room temperature until processed. Three seeds from each sample bag were randomly selected for analysis. The seeds were crushed into fine particles using a mortar and pestle. Each seed sample was extracted using a tissue to buffer ratio of 1 mg: 100 μL, where the buffer is 1X PBS-0.5% Tween 20. Seed extracts were homogenized using a Geno/Grinder 2000 for 3 minutes at approximately 1,500 strokes per minute and then centrifuged at 4°C for 10 minutes at 10,000 rpm. Seed extracts were stored at -20°C until analyzed.

The QC positive was taken from Roundup Ready® soybean seed by DeKalb (brand DKB36-51/ variety 03544870). The QC negative was taken from nontransgenic soybean seeds by Asgrow (variety A3244).

CP4 EPSPS ELISA Analysis

The analytical procedure is a direct sandwich ELISA using horseradish peroxidase conjugate (SOP ANA 01 was followed). Samples, CP4 EPSPS protein standards, buffer blanks, and QC samples were all loaded in triplicate on the microplate at 50 μL per well. The conjugate (Sigma® Anti-Protein 4 Peroxidase Conjugate, diluted to a final concentration of 1:3000 with 1X PBS / 0.05% Tween buffer) was loaded at 100 μL per well. The substrate used was 3,3',5,5'-tetramethylbenzidine (TMB). Soybean seed samples with positive control ratios greater or equal to 0.5 are considered positive for CP4 EPSPS protein.

Appendix I

Soybean Seed - CP4 EPSPS ELISA Results

Sample #	ELISA Result	Sample #	ELISA Result
1-1	(+) Positive	5-5	(+) Positive
1-3	(+) Positive	5-7	(+) Positive
1-5	(+) Positive	5-10	(+) Positive
2-1	(+) Positive	6-2	(+) Positive
2-2	(+) Positive	6-4	(+) Positive
2-3	(+) Positive	6-6	(+) Positive
3-2	(+) Positive	6-9	(+) Positive
3-4	(+) Positive	6-11	(+) Positive
3-6	(+) Positive	7-2	(+) Positive
3-8	(+) Positive	7-4	(+) Positive
3-10	(+) Positive	7-6	(+) Positive
4-1	(+) Positive	8-1	(+) Positive
4-4	(+) Positive	8-3	(+) Positive
4-7	(+) Positive	8-5	(+) Positive
5-1	(+) Positive	8-7	(+) Positive
5-3	(+) Positive	Truck 17996	(+) Positive
Big 12 Truck	(+)Positive	IH Truck	(+) Positive
Gravity Wagon	(+) Positive	Truck 1	(+) Positive
Truck 2	(+) Positive	Truck 3	(+) Positive
Combine	(+) Positive		

APPENDIX J — EXHIBIT 5 TO PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT – EXCERPTS OF DEPOSITION OF VERNON HUGH BOWMAN, UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRE HAUTE DIVISION, FILED SEPTEMBER 30, 2008

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
TERRE HAUTE DIVISION
CASE NO. 2:07-CV-00283-RLY-WGH

MONSANTO COMPANY AND
MONSANTO TECHNOLOGY, LLC,

Plaintiffs,

v.

VERNON HUGH BOWMAN,

Defendant.

The deposition of VERNON HUGH BOWMAN, taken on behalf of the Plaintiffs, Monsanto Company and Monsanto Technology, LLC, in the above cause, pursuant to notice, at the law offices of Sacopulos, Johnson and Sacopulos, located at 676 Ohio Street, Terre Haute, Vigo County, Indiana, on Tuesday, August 26, 2008.

Sue Berry, Notary Public

* * *

[26] **Q When we say the elevator, what's the name of the business that we're talking about?**

A Huey Soil Service.

* * *

[51] **Q Would you say that your fields are cleaner since you've been using Glyphosate products on Glyphosate crops?**

A Yes.

* * *

[56] **Q Understood. Are you aware of any restrictions on Roundup Ready soybeans?**

A Yeah.

Q What's some of the restrictions you're aware of?

A Well, whenever you buy Roundup Ready soybeans, why you have to sell them. You can't keep them for seed.

Q Any other restrictions?

A Well, not that I can think of.

Q You ever heard of someone saying you can't transfer them to another grower?

A Oh, yes. Yes, now that you mention it, yes. Yes, I've heard that.

* * *

[60] **Q Have you ever read the label on a seed bag of Roundup Ready soybeans?**

A I'm sure I have, yes.

Q So any restrictions, notifications that was on that bag you would have read it?

A Yes.

* * *

[63] **Q Now is it true that you went to Huey Soil Service and you bought commodity soybeans that other farmers had produced?**

A Yes.

Q That you planted those soybeans?

A Yes.

Q And you sprayed them with a Glyphosate based herbicide?

A Yes.

Q Anything that survived would have contained the Roundup Ready trait. Is that true?

A It would have contained the trait, yes.

Q Are you aware that Monsanto went to the United State Patent and Trademark Office and filed a patent, multiple patents, protecting its rights on that Roundup Ready trait?

A Right.

Q And it's your understanding that's the [64] **reason we're here today because Monsanto has brought a civil suit alleging that you violated their patent rights?**

A I realize they say I have and I respectfully disagree.

* * *

[66] **Q I want to make sure we clarify this point. The seed that is produced from your second crop each year, do you sell all of your harvest or do you retain a portion of it?**

[67] A No, I have been keeping a portion of it.

Q And you go back to Hammelman — not Hammelman, excuse me — Huey Soil Service and buy a little more every now and then to, I guess, improve your genetics and so forth?

A I have I don't know how many times but, yes, I have gone back and bought their commodity seed at least a couple of times.

Q When you go to Hammelman, do you tell them what you're buying the seed for?

A I have been telling everybody what I have been doing since the beginning of – for – since when I first bought it in '98.

Q In 1998 when you bought it from them, did you tell them then what you were buying it for?

WITNESS: The elevator?

MR. MASSON: Yes, sir. Huey Soil Service.

A I don't know. I can't say whether I told them that or not because if I bought any beans off of him, he knew I didn't have any hogs to feed and he knew I couldn't eat that many, so I would assume that they would have known that I was going to plant those commodity beans. They wouldn't have known [68] whether they were Roundup or whether they could have been 90% non-Roundup. I mean that's possible. I just bought commodity beans and I wanted to know if they were Roundup or non-Roundup and since they were resistant to Roundup, why I kept them and used them because I didn't consider them as a patented product. I knew I couldn't keep a patented product and I agreed not to keep my beans that I purchased, the certified – I'll

call them certified or labeled. I knew I couldn't keep them. I knew I couldn't pass them on to someone else, so I wanted a cheap source of seed and I couldn't buy a private variety protection from a farmer if it was non-Roundup. I couldn't buy that from them because they could only keep that seed themselves, so I wanted a cheap source for a risky crop and I thought that that was a safe way of getting beans, and since they had some Roundup beans in them, then I considered that a bonus to me. And if they hadn't have had Roundup in them, I would have went ahead and used them and used traditional chemicals because – but wheat [69] beans are risky. Yeah, go ahead. Sorry.

Q But you did not use traditional chemicals, did you?

A No, not –

Q You used Glyphosate?

A Right.

Q And you stated before that that made it an ease of farming. Is that correct?

A That's correct.

Q And that it helped clean up your fields. Is that correct?

A Yes.

* * *

Appendix J

[71] **Q Last year during 2007 you had roughly 91.8 acres of second crop soybeans according to your FSA records. What seed did you use to plant those fields?**

WITNESS: What seed?

MR. MASSON: What seed, yes, sir.

A Well, I would have used my – I would have [72] used my second crop beans that I always used.

Q Did you spray those fields with Glyphosate last year?

A (Witness nods head indicating an affirmative response.)

Q Did you take –

A Yes. Yes. I'm sorry. I'm nodding yes.

Q Did you take your harvest and sell it at an elevator?

A Yes.

* * *

[102] **Q Was the Roundup Ready trait in the beans that you saved?**

[103] A Yes. Yes.

Q It was?

A I will say that. Yes.

Q And you knew that because you had treated them with Roundup?

A Right. No, with Glyphosate.

Q With a Glyphosate based herbicide?

A Right.

Q Multiple times you treated them. Is that correct?

A Yes.

Q And everything that you saved had survived those Glyphosate applications?

A Yes.

* * *

[104] **Q You stated earlier it was your testimony that in that chatter everybody knows they are not supposed to save seed.**

A Uh huh (Affirmative response).

Q They also know they are not supposed to transfer it from one farmer to another. Is that correct?

A I think they do. I did anyway.

Q Would you say your knowledge is pretty equivalent to everybody else's knowledge?

A I would say it might be, yes. Should be.

Q So it's fair to say that Mr. Apple knew he wasn't supposed to transfer that seed to you if it was – if it was first generation Roundup Ready soybean seed?

A I would say that he had to know that and that he knew that he couldn't take them back.

* * *

[116] **Q Did you sign a Pioneer Technology Agreement?**

A Yes. Yes.

Q On that technology agreement when you signed it, did it say that you could not save Roundup Ready soybean seed?

A Yes, it did.

Q You understood that the date that you signed it?

A Yes.

Q Back in 1998 the first time that you bought Roundup Ready soybean seed did you understand then you couldn't save Roundup Ready soybean seed?

A Well, I understood from the beginning whenever I bought the first that you couldn't save it, yes.

* * *

[117] **Q Do you remember any correspondence going back and forth that says Monsanto's position is you're not authorized to use Roundup Ready seed during this litigation?**

[118] A I remember a letter them telling me that I wasn't authorized and they told me that before a lawsuit.

Q Did that make you think you shouldn't be planting Roundup Ready stuff this year?

A No. No.

* * *

[119] **Q All right, Mr. Bowman. On your coffee shop talk you had discussed with us that it was understood generally in the community that** [120] **you could not save seed. You yourself knew it since it was first sold.**

A Yes.

Q Is it general understanding in the community that you can't save seed?

A Well, I think so, yes.

* * *

Appendix J

[128] **Q So this is all your own thinking?**

A Yes. So I said, well, if I go there and buy them out of the elevator as commodity beans – because I knew that the elevator can't sell me seed beans. That's illegal. But they can sell me outbound grain, and so I said, well, I will go buy them and if they are non-Roundup, I will just use conventional – or use my old way of planting beans. I will spray them with Roundup before they come up and then I will use what I've been using so I will do that, but if they turn out that they are resistant to Roundup and I can spray them with Roundup, then I will plant them and I will save those seeds, sow them for next year, because you didn't know what variety, you [129] didn't know what maturity, you didn't know what the hell you had in them commodity beans, so you don't want to plant them your first crop. So I decided that I would go and get them and then check them out and see if Glyphosate or Roundup would kill them and enough of them lived that I decided that – of course I knew after the first initial purchase and I knew what everything left – after I sprayed them and what's left I knew they were resistant to Roundup. So that's why I went that route on my second crop. Did I answer?

Q You did. My basic question was whose idea was it?

A Oh, I'm sorry. Mine.

Q It was your idea?

A Yes.

Q You didn't get it from anybody else?

A Well, no.

Q And is anybody else doing this that you know of?

A No.

Q You said it was a bonus, it was a benefit that they were resistant to Roundup. Is [130] **that right?**

A Well, I considered it that way.

Q Did you hope they were Roundup when you planted them, because obviously you planted them in a field you were planting with other Roundup crop, so you wanted them to be. Correct?

A Well, I certainly — put it this way. I certainly didn't object, so if I didn't object, then I guess I had the hope that they were Roundup.

* * *

[132] **Q You said that earlier in your testimony just five minutes ago that the elevator knew it couldn't sell you seed beans, that that would be illegal.**

A Right.

Q Why can't they?

A Well, it's some kind of Indiana law or something I think. I don't know what the reason but they can't go out there in the [133] grain bin and package them up and brown bag them out of the – they haven't been able to for long before Roundup beans came in. They couldn't go get them and package them and say we're selling you these seed beans for so much because they weren't tested, they weren't – the germination wasn't – hadn't been – well, that little tag they put on there, they hadn't been certified. I don't know what the term is, but they just can't brown bag them.

* * *

[138] **Q Two more questions, Mr. Bowman. You stated earlier that there was a cost savings on the** [139] **seed each year because as far as you bought it from Huey Soil Services it was $5.00 to $6.00 a bushel. It would have cost you $30.00 a 50 pound bag to buy it. Is that true?**

A Yes.

* * * *

APPENDIX K — EXHIBIT 6 TO PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT – DAMAGES EXPERT REPORT (DRS. TIMOTHY G. TAYLOR AND GARY F. FAIRCHILD)

Estimated Damages

Monsanto Company versus Vernon H. Bowman

Background

We have been requested by the law firm of Thompson Coburn L.L.C. to provide our professional evaluation and opinion concerning damages with reference to a lawsuit filed by the Monsanto Company (Monsanto) against Vernon H. Bowman (Bowman). In preparing this report we have reviewed the complaint, Monsanto's technology agreement, case materials provided by Counsel, and other pertinent information concerning the economic, environmental, and health impacts of Roundup Ready® soybeans. Key articles are cited in this report. We understand that the defendant produced soybeans in Knox County, Indiana and Monsanto has alleged the defendant saved, used, re-sold or transferred Roundup Ready® for planting seed, without authorization.

Qualifications

Dr. Taylor is a Professor in the Food and Resource Economics Department and Director of the Center for Agribusiness at the University of Florida. He has extensive academic and consulting experience on a wide range of agricultural economic and agribusiness issues. He has supervised the collection, analysis and dissemination

of cost and returns data on Florida vegetable crops for the past 26 years. His educational background and publications are set forth in his C.V. which is attached. He has not testified as an expert in over 20 years and is being compensated at a rate of $175.00 per hour.

Dr. Taylor is being assisted by his colleague, Dr. Gary Fairchild. Dr. Fairchild is a Professor Emeritus in the Food and Economics Department and former Coordinator of the Master of Agribusiness program at the University of Florida. He has extensive academic and industry-research experience and has consulted on a range of agricultural economic and agribusiness issues, including economic impact analyses. His educational background and publications are set forth in his C.V. which is attached. He has not testified as an expert witness in over 15 years and is being compensated at a rate of $175.00 per hour.

Roundup Ready® Soybeans in the U.S.

Roundup Ready® soybean varieties contain a gene transferred to the soybean that makes the soybeans tolerant to the application of glyphosate-based herbicides such as Roundup®. The Roundup® family of herbicides are non-selective herbicides manufactured by Monsanto, and will cause severe injury or death to soybean varieties that do not contain the Roundup Ready® technology.

The Roundup Ready® gene in soybeans was patented in 1994 and the first soybean varieties containing the gene were introduced commercially for sale to farmers in the U.S. in 1996. The Roundup Ready® gene in soybean seed

enables farmers to control weeds in soybean fields more effectively, at reduced costs, and with reduced exposure to more toxic and dangerous herbicides. The high value that fanners place on Roundup Ready® soybean varieties is demonstrated by the speed with which they have adopted the technology. In 1996, the first year of commercial availability, USDA reported herbicide resistant, primarily Roundup Ready® soybean varieties were planted on 1.3 million acres in the United States. In 2007 the USDA estimated that approximately 58.3 million acres, 91% of U.S. soybean acreage, were planted to herbicide resistant varieties. According to estimates by the National Agricultural Statistic Service (NASS), percentage of soybean acreage in Indiana planted to herbicide-tolerant varieties in 2002, 2003, 2004, 2005, 2006 and 2007 was 83%, 88%, 87%, 89%, 92% and 94%, respectively.

Roundup Ready® soybeans are considered as offering many advantages to U.S. farmers, farm workers and the environment. Some of the major benefits are summarized below.

Higher Yields

Average soybean yields vary widely from year to year and from location to location. Within Indiana over the 2002-2007 period, state average soybean yields fluctuated from a low of 38 bushels per acre in 2003 to a high of 51.5 bushels per acre in 2004 (USDA-NASS). In Knox County, yields over this same period averaged 43.3 bushels per acre and ranged from a low of 36.1 bushels per acre in 2002 to a high of 48.7 bushels per acre in 2005.

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The yield of Roundup Ready® crop varieties relative to other varieties is similarly dependent on location, weed infestation, management and growing conditions, but Roundup Ready® soybean varieties have performed well enough in Indiana to replace most conventional soybeans.

In 1999, Benbrook indicated that Roundup Ready® soybeans may out-perform conventional soybeans. Weed control strategies when Roundup Ready® varieties are used are more effective at weed control with less stress placed on the soybean crop from herbicides and other weed management practices. Other commonly used herbicides, such as sulfonylurea and imidazolinone, can stunt soybean growth, cause plant damage, and decrease yields by impairing plants' immune processes and lessening the availability of minerals such as phosphorus.

Marra et al., 2004 (p. 7) summarized some of the studies on comparative yields. They report "Carpenter and Gianessi (2001) summarized economic benefits and costs of Roundup Ready® soybeans and concluded there were advantages relative to conventional soybeans, including some evidence of similar or increased yields. Harley (1998) found slightly higher yields in Roundup Ready® soybeans in North Carolina. However, a report by Benbrook (2001) highlights "yield drag". Yield comparisons by soybean specialists at several Land Grant Colleges have shown smaller yields from RR soybeans relative to conventional soybeans in small-plot studies (Elmore, et al. 2001; Oplinger, et al. 1998). Surveys of growers in Iowa have also found slightly lower yields for Roundup Ready® soybean acres (Duffy, 2001)". In contrast, Heatherly, Elmore and Spurlock

report 1997-99 average yields of glyphosate resistant cultivars was numerically higher than conventional varieties. The USDA (Fernandez-Correjo and McBride) analysis of herbicide-tolerant soybeans found significant but relatively small yield increases as early as the 1997 crop when yield drag would have been expected to show the most.

Reddy and Whiting, in their 2000 study, found no yield differences among cultivars used in the Roundup Ready® or conventional varieties and herbicides programs. Rather, the cost of the individual programs, which included seed cost, established royalty, herbicide, adjuvant, and application costs, were the contributing factors to differences in net return. Heatherly, et al., 2004, had mixed results, some no significant difference, and some higher yields for glyphosate resistant varieties in 2000-2002 in Mississippi experiments. Emerson Nafziger, University of Illinois, reports that yield trials show Roundup Ready® soybeans are even or have a slight yield advantage versus conventional varieties. Monsanto studies in 1999-2000 (PSL Genetics) showed Roundup Ready® soybeans outperformed conventional soybeans by 4 bushels per acre. In 2005, Ellsworth Christmas, Purdue University, and Steve Elmore, University of Nebraska, reported there are so few conventional varieties available, and few new ones being developed, that yield comparisons with the Roundup Ready® varieties could not be effectively made in the last couple of years.

While there may have been some "yield drag" in the first few years after introduction, Roundup Ready® soybeans

are now on a par with, or better yielding than, conventional varieties, as the gene is now incorporated into nearly all elite lines. Further, the great success of Roundup Ready® soybeans is leading nearly all soybean seed companies to focus their efforts on Roundup Ready® soybeans rather than the conventional varieties that have very small sales volume and sales potential. Higher yields with Roundup Ready® soybeans are most likely in areas where weeds are a significant problem.

Lower Costs and Other Benefits

Numerous studies have also shown that Roundup Ready® varieties lower the cost of producing soybeans over a wide range of growing conditions. Roundup Ready® varieties also allow for more flexibility in timing weed control activities, allowing for more stable yields when weather conditions make it difficult to schedule field operations. Furthermore, the enhanced weed control afforded by Roundup Ready® is achieved without requiring farmers to handle more toxic chemical herbicides. Roundup is less toxic than the chemicals it replaces. This has resulted in significant reduction of pesticide use in many growing areas. Because Roundup® controls a broader spectrum of weeds than other herbicides; weed control is also simplified by the use of Roundup Ready® technology. Prior to the introduction of Roundup Ready® soybeans, farmers often applied three or more active ingredients to achieve the same control that is achieved by using Roundup® (Carpenter and Gianessi).

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In the early years of introduction before Roundup® and related glyphosate herbicides prices dropped sharply as glyphosate lost its patent protection, studies such as the USDA (Fernandez-Correjo and McBride) found little or no change in net returns with Roundup Ready® soybean technology. However, the sharp drop in glyphosate herbicide costs made the Roundup Ready® seed and chemical packages more economically attractive.

Reddy and Whiting, in a study published in the journal *Weed Technology*, reported that weed control was significantly better, that production costs were lower and that profit per acre increased by about $35 per acre. Heatherly, Elmore and Spurlock report higher glyphosate resistant yield and lower weed management costs in non-irrigated soybeans, resulting in greater profits.

Other studies have also shown Roundup Ready® varieties to lower per bushel production costs over a wide range of growing conditions (see Carpenter and Gianessi or Marra for reviews). Carpenter and Gianessi estimate that Roundup Ready® soybeans have saved U.S. farmers $216 million in annual weed control costs and have caused an annual reduction of 19 million soybean herbicide applications. These studies do not include savings that have resulted from the rapid decrease in herbicide costs. Between 1996 and 2002, the adoption of Roundup Ready® soybeans, and an accompanying price drop for glyphosate due to competition from generic products, reduced the total cost of soybean herbicides purchased by 35%. This equates to savings estimated at more than $600 million at the grower level.

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Reduced management time and the ability to reduce soil tillage

The availability of Roundup Ready® soybean technology has led to a significant reduction in the amount of management time needed to grow an acre of soybeans. This time saving has occurred through two main avenues – the ability to employ conservation tillage methods, and the simplification of weed control. Craig Dobbins at Purdue believes that the Roundup Ready® program allows farmers a much wider time window for planting and weed control, allowing them to expand acreage farmed with the same labor and deal more easily with bad weather at planting time.

Conservation tillage, or reduced tillage methods, is a group of practices that allow farmers to reduce the number of passes with heavy equipment over each field. The advantages are that additional residue left on the field reduces wind and water erosion, soil tilth is enhanced, less labor is required, and machinery costs are reduced. Conservation tillage has significant benefits for both farmers and for the environment. But while agronomic researchers and extension agents have promoted conservation tillage for several decades, adoption was slow until the appearance of Roundup Ready® soybean, cotton, and corn varieties. A major obstacle to the use of conservation tillage has been the difficulty in controlling weeds without using tillage methods such as moldboard plowing or heavy disking. Roundup Ready® soybean technology has provided farmers with an effective tool that has motivated many farmers to switch from conventional to reduced tillage methods.

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A survey of 452 farmers conducted in 2001 for the American Soybean Association (Doanes) found that the use of conservation tillage methods increased from 60% of farmers to 83% since the introduction of Roundup Ready® soybean varieties in 1996. When farmers in the survey were asked to identify the factor that had the greatest impact toward the adoption of reduced tillage or no-tillage in soybeans during the past 5 years, 54% responded that it was the introduction of Roundup Ready® soybeans (Doanes, p. 15). The next most important factor was mentioned by just 15% of respondents. The implication is that Roundup Ready® soybean technology has been a critical factor in allowing farmers to enjoy the benefits of increased profit and reduced soil erosion from conservation tillage.

The second time saving aspect is that weed control is also much easier to achieve using a Roundup Ready® system. Roundup® controls a much broader spectrum of weeds than the herbicides it replaces. This reduces the need for farmers to scout fields to identify and classify problem weeds. Because Roundup® controls a wide spectrum of weeds it also means that farmers do not need to worry about matching specific herbicides to weed problems or to mix several herbicides in a tank mix to achieve broad spectrum control. Scouting is simple with the Roundup® system, reducing to a matter of noticing whether or not any weeds are present, and deciding whether or not to spray. There is less need to identify weeds, or to match one of several herbicides to particular weeds.

Roundup® also has a longer application window than most other herbicides. Larger weeds can be controlled using

Roundup®. This significantly simplifies weed management and reduces the risk of not being able to control weeds during wet years, or years when management or equipment time is scarce (Bullock and Nitsi). This results in time freed for other farm activities (Marra). Farmers at times refer to Roundup Ready® varieties as "soybeans for dummies" because of the ease with which the system is managed. A key economic advantage that the Roundup Ready® system confers is that a larger acreage can be farmed because of the reduced management time required on each acre.

Intangible benefits: Health and environmental benefits from lower toxicity of herbicides

By using Roundup Ready® soybean varieties, farmers are able to substitute the use of Roundup® for the use of other chemical herbicides and for mechanical cultivation. Roundup® is a Class IV pesticide that the EPA lists as "practically non-toxic". The herbicides that are eliminated are more toxic to humans and persist longer in the environment than Roundup®, so farmers enjoy enhanced health and peace of mind from eliminating or reducing the need to handle toxic herbicides. A recent report from the USDA summarizes the effects of the adoption of Roundup Ready® varieties in the United States as follows:

> "Data indicate that adoption of herbicide tolerant crops leads to substitution of glyphosate herbicides for previously used herbicides. Based on regression results for soybeans, an estimated 5.4 million pounds of glyphosate is substituted

for 7.2 million pounds of other synthetic herbicides, such as imazethapyr, pendimethalin, and trifluralin. Glyphosate has a half-life in the environment of 47 days, compared to 60-90 days for the herbicides it commonly replaces. The herbicides that glyphosate replace are 3.4 to 16.8 times more toxic, according to a chronic risk indicator based on the EPA reference dose for humans. Thus, the substitution enabled by genetic modifications conferring herbicide tolerance on soybeans results in glyphosate replacing other synthetic herbicides that are at least 3 times as toxic and that persist in the environment nearly twice as long as glyphosate." (Heimlich, et al., p. 17)

A Recent Comprehensive View

Marra, et al., 2004, surveyed U.S. soybean growers to acquire their comprehensive estimates of Roundup Ready® soybean program net benefits to farmers in 2003. Reduced trips across the field, lower herbicide costs, more use of no-till, improved worker safety, environmental benefits and added convenience were valued. Lower labor use (19.5 minutes per acre, valued at approximately $6.50 per acre) and lower herbicide costs (of $8.68 per acre for full adopters) were major contributors. Not being able to use saved seed or sell it, and restricted markets for GMO beans were negatives affecting their estimated value. Considering all the benefits and costs of that technology, the estimated net benefit averaged $10.72 per acre for those who adopted the technology fully, and $37.37 per

acre for farmers who achieved greater Roundup Ready® benefits by using reduced tillage.

Farmer use of Monsanto Roundup Ready® soybean technology

The business model that Monsanto has chosen to market their Roundup Ready® technology is through a limited use contract and collection of annual fees from end users. This has been a successful model for Monsanto. To obtain annual use rights to soybean varieties containing Monsanto's Roundup Ready® gene, farmers are required to sign a Technology Agreement upon purchase of Roundup Ready® and other transgenic seeds. Upon payment of an established Royalty to Monsanto, the agreement offers farmers the opportunity to plant Roundup Ready® seed for one year. The farmer agrees: a) to use the seed for only one crop, and to not replant harvested soybeans, b) not to supply harvested seed to anyone else for replanting, c) not to use or allow others to use the seed for crop breeding, research generation of herbicide registration data or seed production, d) not supply any of this seed to any other person for planting. Complying farmers paid a royalty of $7.75/bag in 2002 and 2003, $9.65/bag in 2004, $13.65/bag in 2005 and 2006 and $14.15/bag in 2007 for the restricted contractual right to plant and harvest Roundup Ready® soybean varieties.

Infringement as a threat to Monsanto's brand and future profits

How great a threat is violation of the technology agreement through saving seed and what would it cost

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Monsanto? Crop seed is far more difficult to protect than other patented technologies, as patented soybean technology can be easily infringed upon by any farmer by simply planting, harvesting, storing and replanting his/her crop, bypassing any payments to Monsanto and limitations on the technology use that might be required. The economic threat to Monsanto is significant.

Knox County had 119,300, 113,000, 108,000, 103,300, 123,000, and 97,600 acres planted to soybeans in 2002, 2003, 2004, 2005, 2006, and 2007, respectively (USDA, NASS). Using NASS estimates, the corresponding acres planted to herbicide-tolerant soybeans over this same period in Knox County were about 99,019, 99,440, 93,960, 91,937, 113,160 and 91,744 acres. Based on production budgets used in this analysis, planting rates for no-till practices were 80 lb. per acre (about 1.6-50 pound bags per acre). In 2007 alone, based on these numbers, farmers in Knox County alone would have paid an established Royalty of about $2,077,084 to Monsanto and its partners.

Using the average 2007 Knox County yield of 41.7 bushels per acre, Bowman's estimated 91.8 second-crop acres planted in Roundup Ready® soybeans in 2007 alone could produce enough saved seed to plant 2,392 acres. If this seed were used to supplant purchased seed, lost royalty fees to Monsanto would be about $54,167. Based on a seed price of $23.06 per unit and the above planting rates, total revenue losses for Monsanto would be roughly $88,275. If one extrapolates the use of saved seed to all the estimated 4,700,000 acres of soybeans planted in Indiana in 2007, revenues from seed sales lost by Monsanto would be $173,411,200. Associated lost royalty payments

would amount to $106,408,000. Clearly, the magnitude of the potential revenue losses that could be incurred by Monsanto is significant. If the practice of seed saving were to be left unchecked and expanded to other farmers, the revenue losses incurred by Monsanto would rapidly escalate. Clearly, the threat to the Monsanto Roundup Ready® soybean seed sales and income to Monsanto and its partner seed companies is explosive.

Hypothetical Royalty Negotiations

We have been asked to provide our opinion on the economic value, or reasonable royalty that would result from a hypothetical negotiation between Monsanto representatives and Bowman, following considerations outlined in the *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.* and *Georgia-Pacific Corp. v. U.S. Plywood-Champion Paper.*

In what follows, the most important considerations that would help determine a reasonable royalty payment that could result from this negotiation are outlined. This involves consideration of the set of rights that Bowman seeks and the set of rights that Monsanto would consider conveying to them. Unlicensed use of Monsanto's Roundup Ready® soybean varieties represents a tremendous harm to a profitable product line. Monsanto's ability to maintain control over their patent rights is seriously compromised by the actions of independent agents who could displace their sales and revenues; thus, an unlimited license is undoubtedly not an option to be considered.

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Monsanto currently conveys restricted use rights to Roundup Ready® technology to two client groups, 1) seed companies, including their dealers and brokers, through contractual agreements, and 2) farmers through the Technology Agreement.

Bowman did not comply with technology management provisions that were accepted by other farmers planting varieties containing Monsanto technology. A key characteristic of the technology agreement is that the farmers are buying the right to plant soybean varieties containing Monsanto technology just once - no continuing use rights are granted to farmers beyond the current year. Transfer and reselling are also not allowed.

The biology of soybean seed allows farmers to save seed from their crop in any year to replant it in the next, with the cycle of plant-harvest-replant continuing indefinitely into the future. Soybeans are self-pollinating pure line crops. For example, using the USDA yield estimate for Knox County in 2007 of 41.7 bushels/acre and a seeding rate of 1.60 - 50 lb. units per acre (80 pounds of seed per acre), each acre of soybeans grown produces enough soybeans to plant about 26 acres the following season (one 60 lb. bushel of soybeans after cleaning = one 50 lb. unit of seed). Under reasonably careful management, soybean seeds can be saved from one harvest and replanted the next, continuing for many years. Monsanto conveys only a very limited bundle of rights in their standard agreements with seed dealers and farmers as a means of controlling this easily reproduced technology. The rights assumed by Bowman greatly exceed the rights conveyed by Monsanto,

at great potential risk to Monsanto's ability to protect its intellectual property. The use of the product could include duplication of itself. (Chambers)

By saving seed from earlier years and replanting seed in 2002, 2003, 2004, 2005, 2006, and 2007 (or in the future), Bowman did not (and would not in the future) pay the annual established royalty that farmers adhering to the technology agreement paid to Monsanto, and avoided the limitations of those agreements. The standard Technology Agreement transfers to farmers the rights only to produce and sell soybeans as a commodity. Rights to plant harvested seed, resell purchased seed or transfer it to others are not conveyed in the Technology Agreement.

Reasonable Royalty Calculations

The intent of this analysis is to derive a royalty result from a hypothetical negotiation between a willing licensor (Monsanto) and a willing licensee (Bowman). Unlicensed use of Roundup Ready® soybean varieties represents a tremendous potential for damage to a profitable product line. The following factors must be weighed in determining a likely royalty outcome:

Monsanto

- Monsanto's ability to maintain control over their patent rights is seriously compromised by actions of independent agents that could reproduce, use or sell seed, displacing sales and revenues otherwise going to Monsanto and its seed partners.

- Crop seed is far more difficult to protect than most other patented technologies. Any farmer can easily infringe upon patented soybean technology. Table 1 summarizes the acreage that could be planted with saved seed from Bowman's second-crop soybean acreage as well as estimated revenues and royalty payments that would be lost by Monsanto.

- The lower price of glyphosate herbicides has made the Roundup Ready® soybean seed and herbicide package even more attractive to growers and increased the value of the Roundup Ready® soybean seed patent technology.

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Table 1. Potential Lost Revenue and Royalties to Monsanto from Bowman's Actions				
Season	**Acres planted**	**Acreage plantable with saved seed[1]**	**Lost revenue ($)[2]**	**Lost royalties ($)[3]**
2002	143.7	3,242	103,751	40,203
2003	65	1,612	51,610	19,998
2004	77.5	2,325	79,050	35,898
2005	112.2	3,415	122,943	74,585
2006	112.1	3,194	117,877	69,775
2007	91.8	2,392	88,275	54,167
Total	**602.3**	**16,180**	**563,506**	**294,626**

1. The total number of acres plantable from saved seed is calculated by first determining the total number of 50lb bags of saved seed that can be generated from one planted acre of Roundup Ready® soybeans. The total number of 50lb bags of saved seed is equal to these number times the number of acres planted and harvested. The total number of plantable acres is obtained by dividing this number by the seeding rated (in pounds) per acre.

2. Lost revenue is calculated as the total number of 50lb bags of saved seed that can be obtained in a given year (acreage harvested multiplied by the number of bags of saved seed obtained) multiplied times the market price of Roundup Ready® in a given year.

3. Lost royalties are calculated as the total number of 50lb bags of saved seed that can be obtained in a given year (acreage harvested multiplied by the number bags of saved seed obtained) multiplied times the established royalty per bag of Roundup Ready® in a given year.

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Monsanto runs great risk of losing control of the Roundup Ready® product line unless agents producing soybean seed are restricted from selling in competition with Monsanto and its partners. Defendant claims the purchaser of the patented item buys not only the product, but also an implied license to use and resell that product. And the use of the product could include reproducing it in future seasons for use or sale to other farmers. For these reasons, Monsanto would not enter into a royalty negotiation unless they were fully compensated for the business harm of actual and potential future loss of market share; even then Monsanto would not do so willingly.

Bowman

At the writing of this report no information on cost of production or net return above variable costs based on Bowman's records have been provided. Research into the availability of secondary cost-of-production data for no-till Roundup Ready® soybeans produced in Indiana over the 2002 to 2007 period revealed several possible sources of data. Purdue University produces annual cost-of-production estimates for soybeans, but these data do not discriminate among soybean seed varieties used or production practices (http://www.agecon.purdue.edu/extension/pubs/). The National Agricultural Statistics Service (NASS) produces cost-of-production estimates for soybeans produced in the *heartland* region which includes a number of states including Indiana (http://www.nass.usda.gov/Statistics by State/Indiana/index.asp). However, as with the data published by Purdue, no distinction between production practices and seed varieties is made.

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Detailed cost-of-production estimates for no-till Roundup Ready® are published by The Ohio State University Extension Service and were available for 2003, and 2005 through 2007 (http://aede.osu.edu/programs/FarmManagement/Budgets/index.htm). Given that these cost-of-production budgets reflect growing conditions and markets virtually identical to those faced by Indian growers (Ohio is also included in the NASS heartland region), these data were the basis for estimated cost-of-production for Bowman. The cost estimate for 2003 was used to approximate costs in 2002, and estimates for 2004 were developed by interpolating cost between 2003 and 2005. Gross and net returns were estimated using published soybean yields in Knox County, and Indiana soybean prices over the 2002-2007 period. We believe the cost and return estimates developed in the report are reflective of those experienced by the typical grower of no-till Roundup Ready® soybeans in Knox County, and represent the best available data.

No data on subsidy payments received by Bowman were provided. Examination of data obtained from the Environmental Working Group Farm Subsidy Database available online at: (http://farm.ewg.org/farm/persondetail.php?custnumber=007153621) suggested that Bowman received minimal support payments for soybeans over the 2002-2007 period. As such, no government subsidy payments are included in the estimates. If additional information becomes available, the estimated returns for Bowman can be adjusted accordingly.

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As seen in Table 2, estimated income above variable costs for 2002, 2003, 2004, 2005, 2006 and 2007 was $68.90, $173.04, $136.73, $141.05, $151.58 and $292.04, respectively. Assuming a seed cleaning cost of $1.00 per bushel, and an opportunity cost equal to the market price per bushel of soybeans for each relevant year, that saved seed was planted by Bowman and that no additional saved seed was sold, then the net cost of seed to Bowman would have ranged from approximately $6.55 in 2002 to $11.50 in 2007. Per acre cost saving from using saved seed rather than purchased seed amounts ranged from a low of 11.33 in 2003 to a high of $15.72 in 2005. As seen in Table 3, using saved seed resulted in increased total returns above variable costs over the 2002 to 2007 seasons of $8,366.

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Table 2. Estimated Cost and Returns above Variable Costs for Roundup Ready Soybeans in Indiana

		2002			2003			2004			2005			2006			2007		
Gross Receipts	Unit	Yield	Price	Total	Yield	Price	Total	Yield	Price	Total	Yield	Price	Total	Yield	Price	Total	Yield	Price	Total
Soybeans	Bu/acre	36.10	5.55	200.36	39.7	7.67	304.50	48	5.66	271.68	48.5	5.78	280.33	45.6	6.53	297.77	41.7	10.50	437.85
Estimated Subsidy Payments	Bu/bcl			0.00			0.00			0.00			0.00			0.00			0.00
Total Gross Receipts				200.36			304.50			271.68			280.33			297.77			437.85
Material Costs																			
Seed	50lb	1.60	20.00	32.00	1.60	20.00	32.00	1.60	21.25	34.00	1.60	22.50	36.00	1.60	23.06	36.90	1.60	23.06	36.90
Phosphate	lbs	30.00	0.24	7.20	30.00	0.24	7.20	33.00	0.27	9.00	36.00	0.30	10.80	36.00	0.31	11.25	36.00	0.31	11.25
Potash	lbs	75.00	0.13	9.75	75.00	0.13	9.75	79.00	0.16	12.35	83.00	0.18	14.94	83.00	0.21	17.02	83.00	0.20	16.77
Lime	annual cost			6.00			6.00			5.75			5.50			5.50			5.50
Chemicals	annual cost			24.00			24.00			22.55			21.10			21.10			21.10
Trucking (fuel only)	annual cost			1.20			1.20			1.50			1.80			3.30			2.70
Fuel, Oil, Grease	annual cost			4.31			4.31			4.73			5.15			7.67			6.97
Repairs	annual cost			11.73			11.73			10.56			9.39			7.80			7.80
Crop Insurance	annual cost									2.25			4.50			4.70			5.58
Miscellaneous	annual cost			13.00			13.00			10.00			7.00			7.00			7.00
Interest on Operating Capital	annual cost	5 mo.	0.09	4.27	5 mo.	0.09	4.27	5 mo.	0.09	4.27	5 mo.	0.07	3.10	5 mo.	0.08	3.96	5 mo.	0.09	4.25
Hired Labor	hours	2.00	9.00	18.00	2.00	9.00	18.00	2.00	9.00	18.00	2.00	10.00	20.00	2.00	10.00	20.00	2.00	10.00	20.00
Total Variable Cost				131.46			131.46			134.96			139.28			146.19			145.81
Return Above Variable Cost				68.90			173.04			136.73			141.05			151.58			292.04

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Information available from various sources that can help the defendant develop estimates of the gains from unauthorized use of saved or transferred Roundup Ready® soybean includes the following:

- The potential returns from growing unauthorized Roundup Ready® soybeans which amounts to a total $8,366 over the 2002-2007 period (see Table 3)

- Reduced costs by avoiding the established royalty for 2002, 2003, 2004, 2005, 2006 and 2007 of $7.75, $7.75, $9.65, $13.65, $13.65 and $14.15, respectively;

- Reduced operating capital requirement for seed, reduced chemical and labor costs using glysophate herbicides and the ability to do more no-till operations;

- Other worker safety and environmental benefits from using Roundup Ready® programs, with glysophate herbicides;

- No reduction in yield potential from using new or saved Roundup Ready® seed; and

- Net overall benefits of Roundup Ready® soybeans versus conventional varieties which, based on the recent Marra et al. study, is estimated to be $37.37 per reduced-tillage acre when using newly purchased seed under the terms of the restricted use contract.

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The net gains would be additive for saved seed versus purchased seed and the Roundup Ready® technology benefits (above the cost of purchased seed, estimated to be about $37.00 per no-till acre.)

Table 3. Estimated Increase in Returns above Variable Costs from Using Saved Seed

Season	Acres planted	Seed Cost Savings per acre	Total Increase in net returns
2002	143.7	13.45	$1,933
2003	65	11.33	$736
2004	71.5	14.59	$1,131
2005	112.2	15.72	$1,764
2006	112.1	15.53	$1,741
2007	91.8	11.56	$1,061
Total	**602.3**		**$8,366**

Extent of Infringement

Based on the information above the infringing seed use in this case appears to be 602 acres on which saved Roundup Ready® seed was planted over the 2003-2005 period.

Estimated royalty

The Infringer who avoided new seed purchases would have saved between $11.33 and $15.72 per acre (see Table 3 above) over the 2002 to 2007 period. *The Infringer could*

be deprived of benefits gained through saving and growing unauthorized Roundup Ready® soybeans. The estimated cost and income above variable costs (Table 2) are based on the use of Roundup Ready® soybeans. Thus they reflect the reduced chemical, labor costs, and machinery costs, and the higher cost seed with Roundup Ready® soybeans. If one uses these budget estimates as the starting point, estimated income per acre from soybeans planted in 2002, 2003, 2004, 2005, 2006 and 2007 would be $82.35, $184.37, $151.32, $156.77, $167.11 and $303.60, respectively.

Monsanto may be expected to try to extract a large share of this net income from the infringer. The infringer may argue that other conventional soybeans or other soybeans resistant to other herbicides (though a more costly herbicide package) are available as substitutes. The expected returns from substitute seed sources would be positive, though in all probability, not as much as from the Roundup Ready® program. This difference probably would be the maximum that they would be willing to pay as a royalty in a hypothetical negotiation. If that alternative serves as an effective upper boundary in the negotiation process, it is possible to calculate the corresponding royalty using estimated returns presented in Table 2 and the payoffs from Roundup Ready® soybean programs estimated by economists from North Carolina State University from a national survey of soybean growers.

Marra, et al., 2004, surveyed. U.S. soybean growers and the estimated Roundup Ready® net benefit averaged $10.42 per acre for those who adopted the technology fully, and $37.37 per acre for farmers using reduced

tillage. The defendant has stated that no-till production techniques were used so the upper boundary of the royalty range would be the benefits achieved from the optimal use of the Roundup Ready® technology -- $37 per acre for reduced tillage. The added benefit from the infringed technology would be a reasonable addition to the other two components of the negotiated royalty rate for the saved-seed users. The added benefit from Roundup Ready® seed above the per-unit established royalty paid directly or indirectly by the infringer using transferred seed would be the appropriate minimum royalty fee that would take all ill-gained benefits above conventional seed and return it to Monsanto, leaving Bowman no worse off than if he had not infringed.

Given Monsanto's strong aversion to any unrestricted use, it may be expected that the result of a hypothetical negotiated royalty would extract most of the gains from unauthorized use from the defendant (and that result would not be sufficient to compensate Monsanto for the significant threat to future sales and incomes from the activities of this defendant). For saved seed, the added benefits assuming full implementation of conservation tillage are summarized in Table 4. As can be seen, this implies an upper bound on the negotiated royalty of about $30,874.

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Table 4. Per Acre and Total Benefits using Saved Seed by Bowman, 2002-2007					
Season	**Acres planted**	**Seed Cost Savings per acre**	**Estimated benefit by Marra et al.**	**Total Benefit per acre**	**total Benefit ($)**
2002	143.7	13.45	37.37	50.82	7,302.83
2003	65	11.33	37.37	48.70	3,165.50
2004	77.5	14.59	37.37	51.96	4,026.90
2005	112.2	15.72	37.37	53.09	5,956.70
2006	112.1	15.53	37.37	52.90	5,930.09
2007	91.8	11.56	37.37	48.93	4,491.77
Total					**30,873.80**

Additional Considerations

The threat to Monsanto's brand and market share by Bowman and others becoming infringing competitors also entails an additional cost to Monsanto that should be considered as a factor that should increase the negotiated royalty rate.

While use of the universal restricted-use license lowers contracting costs, Monsanto is subject to hidden actions (i.e. using saved seed) by soybean producers. Absent some credible threat of detection, soybean producers would have minimal economic incentives to abide by the terms of the restricted-use license. Monsanto seeks to overcome this potential problem of hidden action by raising the probability of detection through monitoring activities

such as field sampling and testing, and in the vigorous prosecution of violators. The cost of compliance monitoring activities such as field sampling and testing (excluding any fees associated with litigation) is estimated by Monsanto to be on the order of$15.00 to $17.00 per acre.

To compensate for the significant risks involved in unauthorized use of their technology, Monsanto should insist on no less than 75% of the net income from the infringing soybeans plus the cost associated with field sampling and testing. Based on the per acre estimated income above variable costs for soybeans grown on land owned by Bowman, this suggests a just compensation to Monsanto of between $77 and $79 in 2002, $153 and $155 in 2003, $128 and $130 in 2004, $133 and $135 in 2005, $140 and $142 in 2006, and $243 and $245 in 2007.

Summary

Roundup Ready® soybean technology offers farmers increased profitability, superior agronomic performance, reduced demand for labor and management time, convenience, reliability, and environmental and health advantages. It is improbable that Monsanto would agree to any royalty offer from Bowman in exchange for the rights to use and distribute seed in the manner he actually did.

An infringer who avoided new seed purchases would be saving soybeans, cleaning them inexpensively ($1.00 per bushel plus the opportunity cost equal to the market price per bushel of soybeans for each relevant year), effectively eliminating the cost of purchased seed and incurri Per

acre cost savings to the infringer saving seed illegally from avoiding new seed purchases would have ranged from a low of $11.33 in 2003 to a high of $15.72 in 2005. As seen in Table 3, using saved seed resulted in increased returns above variable costs over the 2002 to 2007 seasons of $8,366.

Monsanto can be expected to seek royalties necessary to compensate for saving and growing unauthorized Roundup Ready® soybeans. The soybean budget in Table 2 reflects the reduced chemical, labor and machinery costs associated with Roundup Ready® soybeans. Using this budget as the starting point, the projected income above variable costs from soybeans planted in 2002, 2003, 2004, 2005, 2006 and 2007 would be $82.35, $184.37, $151.32, $156.77, $167.11 and $303.60, respectively.

One alternative to Roundup Ready® soybeans for Bowman is the use of conventional soybean varieties. The likely benefit that Roundup Ready® soybeans have versus conventional soybean varieties was estimated in Marra, et al.'s study to be $37.37 per acre for farmers adopting the technology optimally using reduced tillage (after paying the seed and established royalties). These benefits would be expected by the infringer, and considered by both parties in the negotiation.

Given Monsanto's strong aversion to any unrestricted use, the result of a negotiated royalty would extract most or all the gains from unauthorized use by defendants (and that result would not be sufficient to compensate Monsanto for the significant threat to future sales and incomes from the

activities of these defendants). For saved seed, this would amount to $50.82 in 2002, $48.70 in 2003, $51.96 in 2004, $53.09 in 2005, $52.90 in 2006 and $48.93 in 2007 per acre.

Longer Run Threats and Potential Costs for Monsanto

There is a real and significant threat to Monsanto's brand and market share by unauthorized infringing competitors like Bowman who could rapidly multiply the seed and sell or use it in competition with Monsanto. This could lead to an accelerating erosion of sales and profits. These threats, while unable to be estimated with any precision, should be an additional consideration in determining appropriate royalties and damages. According to data provided, Mr. Bowman planted 602 acres of second-crop soybeans over the 2002-2007 period (Table 3). Using the Knox County yield data, Bowman could produce enough saved seed to plant 16,183 acres over the 2002-2007 period.

Based on Monsanto's royalty fees over the 2002-2007 period, if this saved seed was used to supplant purchased seed, Monsanto would experience lost royalty fees of about $261,056. Based on the seed price per unit over this same period and the above planting rates, total revenue losses would be roughly $459,756. Clearly, the threat to Monsanto Roundup Ready® soybeans and income to Monsanto and its partner seed companies is explosive, and warrants added compensation.

To compensate for the significant risks involved in unauthorized use of their technology, Monsanto should insist on no less than 75% of the net income from the

infringing soybeans plus the cost associated with field sampling and testing. Based on the per acre estimated income above variable costs for second-crop soybeans grown on land owned by Bowman this suggests a just compensation per acre to Monsanto of between $77 and $79 in 2002, $153 and $155 in 2003, $128 and $130 in 2004, $133 and $135 in 2005, $140 and $142 in 2006, and $243 and $245 in 2007.

These estimates are based on information currently available, and subject to change if new information becomes available.

/s/_____
Timothy G. Taylor, Ph.D.

/s/_____
Gary F. Fairchild, Ph.D.

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APPENDIX L — DEFENDANT'S RESPONSE TO PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT IN THE UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRE HAUTE DIVISION, DATED NOVEMBER 17, 2008

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
TERRE HAUTE DIVISION

Case No. 2:07-CV-00283-RLY-WGH

MONSANTO COMPANY AND MONSANTO TECHNOLOGY, LLC,

Plaintiffs,

v.

VERNON HUGH BOWMAN,

Defendant.

DEFENDANT'S RESPONSE TO PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

Now comes Defendant, Vernon H. Bowman, to answer Plaintiffs' Motion for Summary Judgment. Defendant respectfully requests that the Court issue a summary judgment in favor of the Defendant because of the following issues. (1) As a matter of law Defendant did not infringe on Monsanto's patent rights in Patent Nos. 405 and 247 because of the First Sale Doctrine of Patent Exhaustion.

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See U.S. Supreme Court's June 9, 2008 ruling on Quanta Computer, Inc. v. LG Electronics, Inc. (2) No damages occurred to Monsanto. (3) This is not an exceptional case. (4) As a matter of law Defendant's actions that Monsanto claims to be a willful infringement is instead proper and legal. (5) Monsanto has shown no legal reason for a permanent injunction preventing Defendant from using Pioneer Hi-Bred seeds that contains some of Monsanto's patented crop technologies.

DEFENDANT'S REPLY TO PLAINTIFFS' SUMMARY OF THE ARGUMENT

Since Defendant has been farming he has on occasions purchased commodity grain (wheat and soybeans) to use as seed. These grains were planted mostly in risky situations. Before 1999 when Defendant planted his 2nd-crop soybeans (beans after wheat) he was able to purchase soybean seed from Callahan Seed for one-half (1/2) the original spring price. After the introduction of Roundup Ready soybeans a farmer could not buy these beans for one-half the spring price for his soybean crop planted after wheat. It occurred to Defendant that most of the farmers in his area were probably planting Roundup Ready soybeans. This raised the possibility that a farmer could buy commodity soybean grain to plant after wheat and the crop would be mostly resistant to glyphosate weed killer. This gave the farmer two options. (1) He could plant the grain and use the chemicals that were designed for conventional soybeans (non-GMO). (2) He could test the soybeans in the field for glyphosate resistance and then decide if he could use a glyphosate weed killer.

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Defendant knew that he could not save seed from his purchase of labeled Roundup Ready seed thru authorized seed dealers. Defendant had never read in any farm publications or Monsanto promotions; warning farmers not to plant commodity soybeans because they might and probably would contain some Roundup Ready traits. It seemed only logical that, when Monsanto did not object to their Roundup Ready soybeans being sold to grain dealers and being dumped in grain bins with non-Roundup Ready beans; they were not concerned or did not care about the use of commodity beans as seed. Defendant felt that Monsanto knew the practice of using commodity grain as seed would only be practiced sparingly. This is because commodity grain would contain different maturities, disease resistance, nematode resistance, and other traits. Most farmers would not use commodity grain as seed for their regular spring planting (1st-crop) even if it was free. Today's farmers want and need the latest technology to stay competitive with their neighbors.

Before Defendant decided to try commodity grain as seed for his 2nd-crop beans; he sent a letter to Monsanto asking if he could save Roundup Ready seed and pay Monsanto the tech fee. Monsanto said no. See Defendant's Second Affidavit Para #7-1 and 2.

After Monsanto said no to Defendant's offer, he decided to try commodity grain as a source of seed for his 2nd-crop soybeans. Defendant purchased commodity grain from Huey Soil Service for his 1999 2nd-crop soybeans. This grain was mostly resistant to glyphosate (Roundup) and he saved some of the resultant crop for his

2000 2nd-crop. He continued this practice thru 2007. Only grain (seed) that originated from Huey Soil Service was ever saved for a later planting. No labeled and patented seed was ever saved. See Vernon Hugh Bowman's First Affidavit para #19.

Defendant believes that if Monsanto is going to complain about farmers using the age old practice of buying commodity grain for seed; they should have used 1 of 2 methods to prevent this practice. One, they could have had their Technology Agreements require farmers to sell their patented grain to pre-approved grain dealers who would keep Monsanto's patented traits separate and agree not to sell to farmers who refused to sign a No Plant Agreement. Two, they could have installed their Terminator gene that was patented in 1996; that made 2nd generation seed sterile. Since Monsanto did nothing to prevent farmers from using commodity grain as seed, their patents should be irrelevant if not exhausted under the First Sale Doctrine. Monsanto has never required grain dealer to sign any agreements before buying patented grain from Monsanto's licensed growers (farmers).

Defendant states that, with few exceptions, all of his 1st-crop soybeans were planted with Monsanto's patented Roundup Ready Traits. Defendant states that none of the patented seed was ever saved to plant in a later season, it was all sold as grain to a licensed grain dealer.

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DEFENDANT'S RESPONSE TO MEMORANDUM IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

Defendant will offer his response to Plaintiffs' Memorandum in Support of Plaintiffs' Motion for Summary Judgment. Defendant will explain why he feels Plaintiffs' claims and charges are inappropriate.

I. Defendant's response to Plaintiffs' Introduction

Defendant, Vernon Hugh Bowman, will explain to the Court why he did not infringe on any of Monsanto's patents. Defendant believes there are genuine issues of material fact that exist with regard to the issues of infringement, damages, and permanent injunction. Defendant will give his explanation of Monsanto's five issues on their introduction. (1) Defendant did not infringe on Monsanto's patents for the following reasons. (a) All of Defendant's 1st-crop soybean seed was purchased from Pioneer Hi-Bred or other authorized seed dealers. (b) All of defendant's 2nd-crop soybean seed originated from commodity grain purchased from a local grain dealer. The grain dealer purchased this grain from area farmers who were authorized by their seed dealers to sell their patented crop to the grain dealer of their choice. These patented grains were sold to the grain dealer with no conditions attached. When the grain dealer bought this grain, all of Monsanto's patented seed traits in said grain became exhausted. This is because of the First Sale Doctrine of Exhaustion which states that when the first unconditional sale takes place, that item's patents

are exhausted. The First Sale Doctrine of Exhaustion was further strengthened by a June 9, 2008 Supreme Court unanimous decision (Quanta Computer, Inc. v. LG Electronics, Inc. (06-937) (2) Monsanto's damages claim of $84,456.20 seems to be based on the years of 2002 thru 2007. Monsanto's suit of Oct 12, 2007 refers only to 2006 and later. At our pre-trial settlement conference in Terre Haute; Magistrate Hussmann gave Monsanto the opportunity to amend its complaint about the years involved. Monsanto chose not to do so. On page 5, para. 19 of Monsanto's 09/30/2008 memorandum the acreage involved would be 112.1 and 91.8 for 2006 and 2007. (3) Defendant has not infringed on Monsanto's 605 and 247 patents by using commodity grain purchased from Huey Soil Service. There are two reasons for non-infringement. First, Monsanto did not take the necessary steps to keep their patented grain from being mixed with non-patented grain at the grain elevators. This allowed the patented grain to become ordinary non-patented grain. Monsanto failed to make the necessary moves to protect their Roundup Ready patents. Second, the First Sale Doctrine also voided Monsanto's patents. This surely cannot be an exceptional case based on Defendant's actions and behavior. Defendant's numerous letters to Monsanto and Pioneer clearly show he was being open and honest about his planting practices. Defendant was constantly asking Monsanto what he was doing wrong. Monsanto failed to make any honest efforts to explain Defendant's wrongdoing. Monsanto kept repeating that Defendant was not authorized to use Pioneer's patented seed; even though he had signed a Pioneer Technology Agreement. Monsanto's name does not appear anywhere on Pioneer's technology agreements. Monsanto's

warning of unauthorized use of patented traits seemed to be without any legal merit. See Defendant's Second Affidavit of Vernon Hugh Bowman. (4) As a matter of law, Defendant feels that he did not infringe on any Monsanto patents. Defendant also feels there was no damages done to Monsanto.

(5) Monsanto's only logical reason for wanting to prevent Defendant from using Pioneer Hi-Bred seed with Monsanto's patented traits; would be to harm their competitor Pioneer. Denying Defendant access to Monsanto's patented traits hurts their stockholders. However, Monsanto might also be hoping that in the future unwanted pollen could invade Defendant's fields; and they could claim a violation of a Court Order.

II. DEFENDANT'S RESPONSE TO STATEMENT OF MATERIAL FACTS NOT IN DISPUTE

A. Monsanto's Patented Roundup Ready Trait and License Requirements to Use Roundup Ready Crop Seed.

1. Defendant agrees with paragraphs 1 thru 13; but claims they are legally irrelevant in this lawsuit because of the First Sale Doctrine.

2. Defendant agrees with para. 14, but should comment on its use of (Bowman Depo). Defendant has always known a farmer could not plant labeled patented seed and save some of the crop for seed. Defendant also knew that he could not purchase label patented seed and sell it to another buyer. The illegal transfer section in Pioneer's

tech agreements is difficult to interpret because of the following reasons. (a) Once the farmer has taken delivery of seed and has broken the seal; the seed dealer will not take the seed back. (b) Suppose a farmer rents his neighbor's drill to sow beans. If he finds the drill is half-full of patented soybeans, is he required to remove the beans or can he buy those from his neighbor. I believe all farmers would see nothing wrong with this practice. See (Bowman Depo) at 56:20-25; 57:1-25; 58:1-13 of Plaintiffs' Exhibit #5.

3. Defendant's response to para #15. Mr. Jerry Flint's Affidavit fails to explain or site what laws allows Monsanto to control the buying and selling of grain by licensed grain dealers. Mr. Flint fail to state that the First Sale Doctrine of Exhaustion does not apply to Monsanto's Roundup Ready(R) utility patents and why the doctrine does not apply.

4. Defendant's response to para #16. Defendant agrees with this para, but does not understand how it applies to his use of non-patented grain purchased from a grain dealer and later planted. Defendant has never saved any labeled patented seed to plant. Mr. Flint's affidavit refers to Monsanto's tech. agreements. Defendant has never signed a Monsanto Agreement, but has signed a Pioneer Technology Agreement. Pioneer agreements make no mention about commodity grain being used as seed. Defendant does not understand how Exhibit A of Mr. Flint's affidavit applies to a farmer who buys seed under a Pioneer Hi-Bred agreement.

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B. Defendant's Unauthorized Use of Monsanto's Patented Roundup Ready(R) Seed.

5. Defendant's response to para #17. Defendant denies he purchased commodity soybeans containing the Roundup Ready(R) trait from Huey Soil Service; but he does admit to purchasing patent exhausted glyphosate resistant soybeans for planting.

6. Defendant's response to para #18. Defendant agrees, but must note his saved seed came from 2nd crop grain (double crop non-patented beans).

7. Defendant's response to para #19. Defendant denies that Monsanto can claim infringement and damages for the years 2002, 2003, 2004, and 2005, because Monsanto only referred 2006 and later in its original complaint. Monsanto had the chance to amend their complaint at our pre-trial conference in Terre Haute.

8. Defendant's response to para. 20 thru 22. Defendant admits to para 20 thru 22 with this exception. The seed harvested was tolerant to glyphosate, but came from non-patented (patent exhausted) commodity grain and not Monsanto's Roundup Ready(R) patented traits.

9. Defendant's response to para #23 and 24. Defendant agrees.

10. Defendant's response to para #25. Defendant desired that all of the soybeans purchased from the grain dealer to be used as seed to be glyphosate resistant patent exhausted grain. If most of the grain had not been

resistant to glyphosate the Defendant would have used conventional weed killers.

C. Inspection of Defendant's Soybean Crops.

11. Defendant's response to para #26 thru 32. Defendant agrees.

D. Defendant Knew Since 1999 That His Use of Monsanto's Patented Roundup Ready(R) Seed Was Unauthorized and Infringed Monsanto's Valid Patent Rights.

12. Defendant's response to para #33. Defendant denies Monsanto's spin or interpretation of his May 5, 1999 letter to Pioneer and Monsanto. The letter stated that the Defendant had saved patented seed. Defendant's letter was trying to find out if he could save patented seed by paying a tech fee. See Defendant's Second Affidavit Para #7-1 and 2. Defendant sees nothing in his 1999 letter that states his intention to continue to save Roundup Ready(R) seed and use that seed for future planting regardless of the legality. If Defendant was so intent to save and use illegal Roundup Ready(R) soybeans; why would he go to a grain dealer and buy unknown soybeans with unknown traits to plant after wheat. Plus, why would Defendant go back to his Pioneer dealer every year to buy new seed for his 1st-crop soybeans. Monsanto's spin on the 1999 letter does not seem logical.

13. Defendant's response to para #34: Defendant denies Monsanto's insinuation that he knew as early as 1999 that his use of Monsanto's patented Roundup

Ready(R) seed was unauthorized. Does Monsanto mean that Defendant was not allowed to go to his Pioneer dealer and buy seed with Monsanto's patented traits after 1999 to plant; or that Defendant was not authorized to save patented seed? Monsanto's June 11, 1999 letter did not tell Defendant he could not use their patented traits nor did it say anything about the use of commodity grain as seed. Defendant's letter of Apr 6, 2007 to a Mr. Cape, does not state that Monsanto sent him a letter in 1999 explaining their patent rights and notifying him that his uses of Monsanto's patented seed technology were unauthorized. Defendant does not understand what Monsanto is claiming in para #34.

14. Defendant's response to para #35. Defendant agrees with this para. Defendant does not understand the point Monsanto is trying to make in this para., but he will deny that Monsanto has any right to control the use of commodity grain as seed. See Quanta Computer, Inc. v. LG Electronics, Inc. (06-937).

15. Defendant's response to para. #36: Defendant denies that he concocted a scheme to obtain a cheap source of Roundup Ready(R) seed. Farmers have a long history of buying commodity grain to plant. It is not uncommon for farmers to use commodity wheat for seed. It did not take much scheming to think of using commodity soybeans as a source of cheap seed to use in risky situations. See First Affidavit of Vernon Hugh Bowman para. #4. The fact that Defendant got a bonus when his commodity beans turned out to be resistant to Glyphosate should not be considered a scheme or illegal. Defendant believes Monsanto's reference to a 4/6/1999 should be 4/6/2007.

16. Defendant's response to para. #37: Does Monsanto consider Defendant's scheme from 2000 to 2007 to include his 1st and 2nd crop beans? Defendant's so called scheme pertained to his 2nd-crop beans only. Monsanto's claim that Defendant saved substantial amounts of money is pure speculation. Defendants use of an inferior seed could easily have cost him more than he saved. Defendant appears to be the only farmer who has been sued for saving commodity grain as seed; therefore, it must not be a very good scheme.

E. In addition to Defendant's Admitted Knowledge, and Ordinary Indiana Soybean Farmer Knew in at Least 2000 that Planting Saved Roundup Ready(R) Soybeans Constituted Infringement of Valid Patent Rights.

17. Defendant's response to para. #38 thru 40: Defendant will not question the facts in para. 38 thru 40; but Defendant must make two comments. One is that Defendant's Technology agreement is with Pioneer Hi-Bred and not Monsanto. The 2nd is that Defendant's Technology Agreement does not state that a farmer can not purchase commodity soybeans to plant for a cash crop if it contains glyphosate resistance. It does not state that the First Sale Doctrine of Exhaustion does not apply to Monsanto's Utility Patents or to commodity soybeans. Because the First Sale Doctrine exits patents 605 and 247 are irrelevant.

18. Defendant's response to para. #41 thru 42: Defendant admits that he has read a Technology Agreement that says a farmer cannot transfer seed to

anyone except a license dealer. That stipulation in the Technology Agreement is impossible for farmers to work with. With large modern planters most farmers will finish a field or the planting season with several units of seed in his equipment. Suppose farmer A has agreed to plant beans for farmer B when he gets the chance. Farmer A has just filled his planter and not long afterward he is rained out of his field. Farmer A finds that farmer B's field is dry. Farmer B agrees to pay farmer A for the leftover seed. Both farmers then have technically violated their tech agreements. A bigger problem occurs when a farmer ends up with treated seed leftover; because grain dealers can't buy it. Similar situations to the above occur throughout the farming world. It is hard to understand why Monsanto would object to farmers selling their leftover seed to a neighbor. Also when the seal of a seed container is broken; the seed dealer will not take the seed back because he cannot guarantee the certainty of the seed to the next buyer. Monsanto thinks that farmers selling their leftover patented seed to a neighbor is a terrible act. Defendant's Pioneer dealer has said that this rule is unreasonable.

F. Monsanto Has Notified Defendant That He Is Not Authorized to Use Monsanto's Patent Roundup Ready(R) Soybean Technology, However, Defendant has Continued to Use Roundup Ready(R) Soybeans and Refuses to Discontinue His Use Unless Forced to Do So by This Court.

19. Defendant's response to para. #43 thru 44: When Monsanto first told Defendant that he was not authorized to use their patented traits; Defendant had already purchased his 2007 seed from Pioneer Hi-Bred.

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Defendant then wrote Pioneer to find out if Monsanto had told Pioneer not to sell Defendant any seed that used their patented technology. Pioneer responded by telling Defendant that Monsanto had not notified Pioneer to refuse selling any seed to Defendant that contained Monsanto patents. Defendant's Technology Agreement with Pioneer authorizes him to buy any seed Pioneer offers for sale. Defendant believes it is not legally permissible for Monsanto to tell the Defendant that he can not purchase Pioneer's seed even though the seed has Monsanto patented traits; without first going to court. Defendant understands that it is illegal for a company selling its products to the public to refuse to sell those products to someone because they prefer not to. There has to be a legal reason for refusing sales or service to someone. Defendant believes it was legal and logical for him to disregard Monsanto's claims of unauthorized use of Pioneer seed.

III. LAW AND ARGUMENT

A. Legal Standards for Granting Summary Judgment.

Defendant will show the court that there are genuine issues of material facts that are in dispute. From the beginning of Monsanto's investigation of Defendant's possible infringement, Defendant has always stated that his 2nd crop seed originated from commodity grain. The commodity grain was sold by area farmers to a local grain dealer without any contracts or conditions involved. Defendant then purchased the commodity grain from the grain dealer without any conditions attached. This is a classic example of the First Sale Doctrine of Patent

Exhaustion (Quanta Computer, Inc. v. LG Electronics, Inc. (06-937).

Defendant claims that Monsanto's prior lawsuits concerning infringement on their 605 and 247 patents; resulted from farmers who saved seed that came from 1st generation patented and labeled seed. That act is clearly illegal. Monsanto has admitted the Defendant's 1st crop soybeans were planted with Monsanto's patented traits purchased thru Pioneer Hi-Bred. Defendant obtained these patented traits legally since he had a legally binding Technology Agreement with Pioneer. Monsanto is objecting to the Defendant's practice of buying commodity mixed soybean grain and planting it after wheat and then saving some of the resultant grain to plant the next year. There have been no laws passed, no warnings from Monsanto, and no prohibitive clauses in Pioneer's Technology Agreements that would make the practice of using commodity grain as seed illegal regardless of whether it contained former patented traits or not. Defendant has not found any court cases involving Monsanto or other seed companies that would be similar to his. Defendant believes that Monsanto's claims for Summary Judgment are insufficient.

B. Infringement is Determined by Properly Construing the Claims of the Patent Asserted by the Patent Holder, and Comparing the Claims to the Accused Device.

Under Section 3 of Part III Monsanto's claims of patent infringement is baseless and their references to prior cases are irrelevant. Monsanto admits there is no

dispute that the seeds used by Defendant on his 1st crop soybeans were purchased from Pioneer with complete obeyance of Pioneer's Technology Agreement. Defendant's 2nd crop (after wheat) soybeans came from commodity soybeans purchased from a local grain dealer. There have been no court rulings that found the principle of First Sale Doctrine of Patent Exhaustion does not apply to commodity soybeans of mixed heritage that were purchased from area farmers by a licensed grain dealer and stored in his commercial bins. Defendant claims that if Monsanto wants to prevent harvested commodity soybean grain stored in a grain dealer's bin from being purchased by a farmer and then used as seed; Monsanto would have to require that all Technology Agreements have a clause demanding that the grower of patented traits sell his grain back to Monsanto or to a Monsanto approved grain dealer or else use their terminator gene that was obtained when they acquired Delta Pine and Land Company. Monsanto has not used either option, thus the First Sale Doctrine would apply to their Utility patents. Defendant has found no evidence that a law exists declaring that when a patented product can replicate it's self the First Sale Doctrine is void. Defendant claims that Monsanto did not take all the necessary steps to protect its Roundup Ready(R) Utility patents; and they are now trying to "close the barn door after the horse is out."

1. The Claims of the 605 patent: Defendant states that these claims are irrelevant.

2. The claims of the 247 patent: Defendant states that these claims are irrelevant.

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3. The results of Three Scientific Tests Establish that Every Field of Defendant's 2007 Soybean Crop was Planted with Roundup Ready(R) Soybeans:

Defendant admits every field of 1st crop soybeans planted in 2007 were purchased from Pioneer in accordance to Pioneer's Technology Agreement. Defendant denies his 2nd crop soybeans planted from 2000 to 2007 contained Monsanto's patented Roundup Ready(R) technology. Defendant claims all of his 2nd crop soybeans contained glyphosate resistant traits that had their beginning as Roundup Ready(R) patented Monsanto seed; but due to the First Sale Doctrine of Exhaustion that occurred when the local grain dealer bought area farmers grain unconditionally, no infringement of a patent exists.

4. A Grower who Uses Monsanto's Patented Roundup Ready(R) Soybeans Without Authorization Violates Monsanto's Patent Rights Secured by the 605 Patent and the 247 Patent.

Defendant denies he has ever used Monsanto's Patented Roundup Ready(R) soybean seed without authorization. Defendant has purchased all of his Roundup Ready(R) soybean seed from licensed seed dealers in accordance to Pioneer's Technology Agreement. Monsanto's claim that Defendant purchased patented Roundup Ready(R) soybeans without authorization is clearly false. Defendant gave Pioneer a signed technology agreement and this agreement gave Defendant the right to buy Pioneer seed

beans until Pioneer decides not to or legal action directs them not to. Defendant claims that Monsanto has no legal right to give him a written notice that he cannot purchase Pioneer soybean seed that contains patented Monsanto traits, because that would be Pioneer's responsibility or should require a court order.

In sum, Defendant's use of Monsanto's patented Roundup Ready(R) soybeans with Pioneer's authorization makes it clear that there is no infringement of Monsanto's 605 or 247 patents.

5. A Grower who, Without Authorization, Plants Roundup Ready(R) Soybean Seed and Applies a Glyphosate-Based Herbicide to Control Weed in their Field, Violates Monsanto's Patent Rights Secured by the 247 Patent.

Defendant denies he has planted Roundup Ready(R) soybean seed without authorization from his dealer, Pioneer Hi-Bred who is legally licensed by Monsanto to install Monsanto's Roundup Ready(R) traits in Pioneer's soybean seeds. Pioneer told Defendant that Monsanto had not directed them to not sell Defendant any of Monsanto's Roundup Ready(R) traits.

a. Planting Glyphosate-Tolerant Plant Seeds.

Defendant denies that all of the soybeans he planted were Roundup Ready(R). Defendant admits that his 1st crop soybeans were planted with Roundup Ready(R) traits.

Appendix L

Defendant admits that his 2nd crop soybeans were planted with commodity grain that turned out to be resistant to glyphosate herbicide. This grain was purchased from a local grain dealer who purchased it thru an unconditional sale from area farmers. It came from his bins that held both GMO (genetic modified organisms) soybeans and non-GMO soybeans. Defendant claims that when a farmer sells his grain to a grain dealer it is an unconditional sale. When the grain dealer sold his commodity grain to Defendant that sale was also an unconditional sale. Monsanto has not shown any proof that the grain dealer's purchase of a farmers patented grain is a conditional sale. Pioneer's technology agreements (approved by Monsanto) clearly explains how a farmer is to use the patented technology he has purchased. Pioneer's tech. agreements do not state which grain dealers are permitted to purchase a farmers patented grain nor do they state what conditions the grain dealer must accept when he purchases a farmer's patented grain. There is clearly a dispute that Defendant knowingly used Roundup Ready(R) soybeans illegally.

b. Applying Glyphosate-Based Herbicide to the Crops and Weeds in the field.

Defendant agrees with the 1st para. under b. above. Defendant disagrees with Monsanto's claims in the 2nd para. under b. above. Defendant denies that both required steps of Claim 130 of the 247 patent were performed by Defendant without authorization or license from Monsanto for each planting year from 2000 to 2007. Defendant's technology agreement with Pioneer authorized him to plant Roundup Ready(R) soybeans and to apply a glyphosate

based herbicide to his crops without infringing on any Monsanto patents for the years 2000 to 2007. Defendant's planting of patent exhausted commodity grain on his 2nd crop acres did not require Monsanto's authorization to use a glyphosate-based herbicide. Defendants explanation of his planting and herbicide program clearly indicates that there is a clear and genuine fact the Defendant did not infringe on Monsanto's patented method of weed control.

C. Defendant Acted Despite an Objectively High Likelihood that His Actions Constituted Infringement of a Valid Patent and He knew of that Risk Prior to Using Roundup Ready(R) Soybean Seeds for his 2000-2007 Second Crop Soybeans.

Defendant denies Monsanto's claim he acted despite an objectively high likelihood that his actions constituted infringement of a valid patent and he knew of that risk prior to using Roundup Ready(R) soybean seed for his 2000-2007 second crop soybeans. Since the beginning of commercial grain dealers, farmers have used commodity grain as seed. No law has been passed that prevents a farmer from purchasing out-bound grain and then using that grain as seed. When Defendant purchased commodity grain to plant his 2nd crop beans he did not know what percent of the commodity beans were GMO or non-GMO. If most of the commodity beans would have been non-GMO the Defendant was prepared to use non-glyphosate based herbicide. Defendant would not have thought that GMO soybeans with Monsanto's traits being mixed in with non-GMO soybeans would be illegal to plant. This

is because Defendant had never heard, had never read in farm magazines or seed company advertisements, or read in his Pioneer technology agreement that Monsanto's patented Roundup Ready(R) traits carried over into commodity soybeans owned by a grain dealer. It seems only logical that once Monsanto's patented traits were dumped in commercial bins with conventional beans that Monsanto's patents would be irrelevant. When Defendant found out that most of his purchased commodity soybeans were GMO he considered that to be a legal bonus and used glyphosate on his 2nd crop beans. The above facts hardly point to willful infringement of Monsanto's patents. When you add the fact that the First Sale Doctrine of Patent Exhaustion goes into effect when grain is unconditional sold and bought; it seems that Monsanto's claim of willful infringement is illogical and desperate.

Defendant would like to comment on the 3rd paragraph under the above C. This para starts with the words *Moreover, in this case.* Defendant will comment on each sentence in this para. *1st sentence*: Defendant denies he knew of any risk caused by his actions; if he did he would have acted differently. *2nd Sentence:* Defendant knew he should not save and plant Roundup Ready(R) seeds; that was why Defendant never saved any of his 1st crop grain to plant after wheat (2nd crop). That was also why Defendant bought commodity mixed grain to plant his 2nd crop beans. *3rd sentence:* Defendant agrees with this sentence and that is why he did nothing illegal. *4th sentence:* Defendant denies he implemented any scheme to obtain Roundup Ready(R) soybeans for a cheap price. Defendant does admit that he was looking for a cheap

source of seed for his 2nd crop beans. Defendant could not buy non-GMO PVPA (Private Variety Protection Act) soybeans from a farmer to later plant for a cash crop because it is illegal. Only the farmer who originally buys PVPA varieties is allowed to save seed. Defendant's only option to obtain a cheap source of seed for a risky crop was to buy commodity grain. Defendant feels this is hardly a scheme. *5th sentence:* Defendant denies he acted despite both an objectively high likelihood and Defendant's own admitted subjective belief that his actions constituted infringement of a valid patent. Defendant believes that the First Sale Doctrine of patent exhaustion principle is a fact and not a subjective belief when applied to commodity grain. Monsanto has not proven otherwise. See Quanta Computer, Inc. v. LG Electronics, Inc. (06-937) June 9, 2008. Defendant claims that Monsanto's statement that Defendant's actions resulted in an objectively high likelihood he constituted infringement of a valid patent is false.

Defendant now comments on 4th and last paragraph under the above C. section of LAW AND ARGUMENT. Defendant will comment on each sentence in this paragraph. *1st sentence:* The Court should find as a matter of law that Defendant did not willfully infringe on Monsanto's 605 and 247 patents because of two reasons. First Pioneer's technology agreement did not require Defendant to sell his patented grain to an approved grain dealer; this caused mixing or contamination in commercial grain bins. The resultant product in the bins would have to be called simply soybeans and not conventional soybeans or Roundup Ready(R) soybeans. This mixing allows a

farmer to buy the grain and turn it into seed with no strings attached. Second since the sale of grain from the producing farmer to the grain dealer was not conditional, and the sale of grain from the grain dealer to the planting farmer also was not conditional the First Sale Doctrine has to be in effect. Because of the two above reasons there is no willful infringement of Monsanto's 605 and 247 patents. *2nd sentence:* Defendant denies the planting of Roundup Ready(R), soybeans without authorization and saving his harvested soybeans that survived multiple applications of glyphosate-based herbicide and thus were Roundup Ready(R). Defendant does admit to planting Roundup Ready(R) soybeans with full compliance of his tech. agreement with Pioneer. Defendant did not save any of these soybeans to plant after wheat. The seed that Defendant did save to plant later for his 2nd crop beans came from patent exhausted or patent irrelevant commodity soybeans bought unconditionally from a local grain dealer. *3rd sentence:* Defendant denies there are no disputed material issues of fact and therefore the Court should not enter a judgment that Defendant willfully infringed Monsanto's 605 and 247 patents.

D. Defendant's willful Infringement Makes this an Exceptional Case Entitling Monsanto To Attorneys' Fees.

Defendant claims that this case should not be found to be exceptional because Defendant has never infringed on Monsanto's 605 and 247 patents. Further, Defendant denies that he has admitted willful infringement of the 605 and 247 patents. There was never any seed saved

from Defendant's purchase of Roundup Ready(R) seed and Monsanto's 605 and 247 patents did not apply to Defendant's commodity grain purchased unconditionally from a local grain dealer for the purpose of planting after wheat. There was no reason Defendant would have thought that Monsanto's patents would have carried over to commodity grain.

E. The Law Entitles Monsanto to a Reasonable Royalty as Damages for Defendant's Patent Infringement Plus Prejudgment Interest and Costs. Enhanced (Trefle) Damages for Defendant's Willful Infringement, and Attorneys' Fees Because this is an Exceptional Case.

Defendant denies Monsanto is entitled to any of the benefits listed in paragraph E. above; because Defendant has not infringed on any Monsanto patents nor has he purchased or used any Roundup Ready(R) seed that was not authorized by his seed source Pioneer.

1. Monsanto Is Entitled to Damages in the Amount of a Reasonable Royalty for Defendant's Infringement of Monsanto's 605 Patent and 247 Patent.

Defendant denies he has ever infringed on Monsanto's 605 and 247 patents. Monsanto has never proven that Defendant has infringed on their patents. Monsanto is trying to claim that because Defendant's 2nd crop beans that were tested showed positive for Monsanto's Roundup

Ready(R); the Defendant did indeed infringe on Patents 605 and 247. Defendant has always admitted that his 2nd crop soybeans would test positive for Roundup Ready(R) traits. This is because there is no test available that can tell the difference between Roundup Ready(R) traited soybeans and soybeans that were purchased from a grain dealer that had their patented traits exhausted by the First Sale Doctrine or their patent made invalid because they were mixed together with conventional soybeans. Monsanto does not like the possibility of Patent exhaustion applying to their patents or being forced to keep their traits separate at the grain markets. Monsanto wants to enjoy the benefits of their patents but tries to ignore the disadvantages of the same patents. In this lawsuit Monsanto is trying to turn a disadvantage into an infringement by claiming commodity soybean grain that was purchased by grain dealers from area farmers is illegal to plant should it contain any traits identical to Roundup Ready(R) traits.

Monsanto is trying to claim damages or benefits for the years 2002 thru 2007. Defendant believes that if Monsanto prevails in this case their years would be limited to 2006 and 2007 by the Complaint of Oct. 12, 2007.

Defendant feels that Monsanto's request for damages and other compensations is unreasonably high. Defendant feels that should Monsanto prevail in this case they should be awarded 3 times Pioneers license fee (tech fee) for each 50 lb. unit planted on Defendant's 2nd crop acres for the years 2006 and 2007.

2. Defendant has never used patented Monsanto seed that he knew was not authorized for him to use. All of Monsanto's patented traits were purchased thru Pioneer Hi-Bred after Monsanto attorneys told Defendant he was not authorized to purchase their patented traits. These warnings were issued before any legal action was taken. Defendant then called Pioneer to find out what he should do with the seed he had bought and paid for in 2006 for planting in 2007. Pioneer responded by saying that Monsanto had not contacted them about Defendant's authority to buy Monsanto's patent traits that were in Pioneer's seed. Pioneer said they would be willing to sell me their Monsanto traited seed. Defendant claims that his purchase of Pioneer seed was authorized because Monsanto never told Pioneer not to sell Defendant seed that contained their patents and no legal orders were in place.

Defendant will now discuss his use of commodity soybean grain as seed for his 2nd crop soybeans. Prior to the invention of Roundup Ready soybeans Defendant had occasionally purchased commodity soybeans to plant under risky conditions. Also before Roundup Ready soybeans Defendant used Callahan seed for his 2nd crop beans. When farmers were going to plant 2nd crop beans, Calahan Seed would cut the price in half. After Roundup seed that option was gone. At the same time most all conventional bean seed came under the Private Variety Protection Act (PVPA). This meant that a farmer could save his own seed but could not sell it to a neighbor. When Defendant wanted a cheap source of seed for his 2nd crop soybeans he knew the only place he could buy it was thru

a grain dealer. When Defendant purchased commodity beans in the late 1990's for his 2nd crop soybeans there were no warnings issued about planting them for 1st or 2nd crop. It seemed logical that when different Varieties with different traits were mixed together, Monsanto would no longer be concerned. Defendant did not know at this time that the First Sale Doctrine was already in force. Because defendant considered his action legal he told a lot of farmers about his practice. This does seem like a person who knew his practice of abtaining seed was illegal.

3. After Defendant was first notified in a letter dated Jan 8, 2007 that he may have saved seed illegally and that until the matter was resolved he was not authorized to use their traits. Defendant asked in his many letters to Monsanto over the next several months, why his practice of using commodity seed was illegal. Monsanto skillfully avoided answering.

4. Monsanto seems to thank the Defendant has concocted two schemes to prevent Monsanto from receiving any money if Monsanto prevails in this lawsuit. The Court needs to know that the irrevocable trust set up for the defendant was recorded in 1996, also, Defendant has given all his income to his sister since 1996. It does not seem logical that Defendant would start his schemes to defraud Monsanto as far back as 1996.

5. Defendant agrees that this is not a close case. There is ample evidence that Defendant did not infringe on any Monsanto patents.

6. Defendant has never infringed on Monsanto patents.

7. Defendant never took remedial action because he has done nothing illegal or immoral. Defendant's source of Monsanto's patented traits is Pioneer Hi-Bred. Pioneer has told Defendant that they will continue to sell him any seed they have for sale until required to stop. Defendant believed that Monsanto's claim of unauthorization was a bullying tactic without legal backing.

8. Defendant has never admitted he used Monsanto's patented seed technology without his seed supplier's (Pioneer) authorization. His 2nd-crop seed came from patent exhausted commodity grain.

9. Defendant did not concoct any scheme to defraud Monsanto out of the benefits of patents.

It appears that Monsanto is terrified of farmers using commodity seed. They act as if farmers are allowed to use commodity mixed grain, their seed business would be destroyed. If Defendant benefited as much as Monsanto tries to claim, why would Defendant use commodity grain as seed only on his 2nd crop soybeans. Something doesn't add up. If Monsanto's complaint of Oct. 12, 2007 does not ask for damages before 2006, Monsanto's request for enhanced damages of $253,368.60 seems high.

3. Monsanto Should Receive Prejudgment Interest on the Reasonable Royalty and Costs Associated with this Litigation

Defendant claims that this litigation has no legal basis or facts to depend on. Defendant claims and will show that all of his planted seeds that contained Monsanto's patented traits were legally purchased and legally used. None of the patented grain was saved and planted. The grain that was saved and planted came from a grain dealers bin of commodity soybeans that was no longer under the control of Monsanto's patents. There are no laws that permit or suggest that Monsanto is allowed to prevent the use of commodity grain as a source of seed. Monsanto has permitted and encouraged grain dealers to mix Monsanto's patented traits with conventional beans. This maneuver allows Monsanto to try to prevent farmers from using commodity beans as seed, because most grain dealers mix the two grains. Defendant is sure the U.S.P.T.O. did not think Monsanto would try to include commodity grain as their patented product; thus eliminating common grain as a source of seed for risky situations. If Monsanto wants to prevent farmers from using grain that has their traits, they should demand that farmers growing their patented traits keep GMO grain separate by signing a Technology Agreement that requires them to sell their grain to pre-approved grain buyers. If Monsanto's patents are not irrelevant to commodity grain then the First Sale Doctrine of Exhaustion is. Simple logic should prevent Monsanto from being allowed to claim all of the advantages of their patents while being allowed to ignore the disadvantages and problems their patents cause.

4. This Case is Exceptional and Monsanto Should be Awarded a Judgment for their Attorneys' Fees.

When the Court examines the correspondence between defendant and Monsanto prior to the Oct. 12, 2007 complaint and the presented facts; Defendant feels the court will decide that this is not an exceptional case.

Defendant notes that Monsanto is claiming that the Monsanto Co. v. David case is similar to Defendant's current case. Defendant denies there is any similarities for the following reasons. 1. David never sent a letter to Monsanto saying he had saved seed and wanted to know where to send a tech fee if allowed to do so (May 5, 1999 letter from Defendant). 2. David acquired Roundup Ready(R) seed in labeled containers that clearly stated what he could and could not do with the resultant seed; but defiantly save and planted the patented seed. 3. When Defendant purchased his patented and labeled seed he did not save and plant any of it. 4. Defendant has never denied that he purchased commodity soybeans that were mostly descendants of patented seed; but Defendant claims that once this grain was mixed with other soybeans Monsanto's patents were invalid.

Further, Defendant claims that when the grain dealer bought the patented grain he bought it unconditionally. Plus, when Defendant bought the commodity grain from the grain dealer he bought it unconditionally. This should be a classic example of the First Sale Doctrine of Patent Exhaustion. 5. David never suggested that he bought

patent exhausted commodity grain to plant. Defendant claims it is not reasonable or logical for Monsanto to suggest that the two cases are similar and the Defendant's case is exceptional.

F. Monsanto is Entitled to a Permanent Injunction Prohibiting Defendant From Making, Using, Selling, or Offering to Sell any of Plaintiff's Patented Crop Technologies.

Defendant would like to respond para. F. above by bring up some what ifs. Defendant has one field that contains 50 acres. It is a narrow field that is three quarters (3/4) of a mile long. Suppose that defendant plants this field in conventional hybrid corn and his neighbor plants corn on all 4 sides that contains Monsanto's patented traits. It is quite possible that pollen from the neighbor's field will pollinate enough plants that it would be turned down by a grain dealer who offers a premium for non-GMO corn. What if Monsanto then tests the field to see if Defendant has violated the injunction. Does Monsanto then sue the Defendant and claim they own the corn plus other damages. Or, suppose a neighbor has agreed to plant a field for the Defendant; and the Defendant has left his non-GMO seeds at the field for the neighbor to plant. When the neighbor shows up at Defendant's field, he has a substantial amount of his GMO Monsanto patented seed left in his planter. The neighbor then fills his planter with Defendant's seed, but left his own GMO seeds in the planter. What if, Monsanto tests the field to see if Defendant violated the injunction; they could then claim the Defendant violated a Court order. What if the

same thing happened to the Defendant that happened to a Canadian farmer and seed developer. In 1998, Monsanto launched a lawsuit against Mr. Schmeiser. Before the trial, Monsanto withdrew their allegations of illegal obtaining their seed. Monsanto claimed it didn't matter how the seed got onto Mr. Schmeiser, he still infringed on their patents. Mr. Schmeiser was found guilty of patent infringement even though he didn't want the traits in his field. If the same thing happened to the Defendant would he also be guilty of disobeying a court injunction.

Monsanto claims that Defendant has admitted that he will continue to use Monsanto's patented seed technology unless a permanent injunction stops him. Monsanto's claim is clearly false. See Defendant's Deposition to Monsanto on sheet 36, page 138, lines 14 thru 23. Here Defendant clearly states that Monsanto could tell Pioneer not to sell him any of the traits. Defendant fears that should Monsanto prevail in their lawsuit and they found proof some of their patented traits were in his fields even though Defendant did not want them, Monsanto could file Contempt of Court charges.

In the third paragraph of F. above where it starts with "The balance of" Defendant would like to make an observation. Monsanto claims it will be irreparably harmed by future infringement by the Defendant. It would be interesting to know how Monsanto figures it was harmed when Defendant signed a Pioneer technology agreement, legally purchased Pioneer seed with Monsanto patented traits, and never saved any of the seed; instead sold all the grain to grain dealers that came from his 1st crop soybeans. Now lets look at the 2nd crop soybeans.

Appendix L

Defendant wanted a cheap source of seed for his 2nd crop beans because of the normal risks in growing "wheat beans." Defendant simply wasn't going to plant high priced soybean seed after his wheat crop. Defendant could have purchased conventional seed then save its offsprings for "wheat beans." Defendant decided to purchase a grain dealer's commodity grain, because he felt there was a good chance he would obtain mostly grain that would be resistant to glyphosate. Defendant felt that this grain was legal to plant, because it now belonged to the grain dealer and Monsanto had no control of this mixed variety of soybeans. If the purchased grain would have turned out to be mostly non-GMO Defendant could have used conventional weed killers and saved that grain for seed. Later Defendant found out about the First Sale Doctrine of Exhaustion which further strengthens his belief that he has never infringed on any Monsanto patents. Back to Monsanto's irreparably harm. How is Monsanto and its stockholders harmed if the Defendant continues to buy Pioneer seed with Monsanto's patented traits in their corn and soybeans for his 1st crops and then saves conventional soybeans for his 2nd crop (wheat beans) soybeans. Why Monsanto thinks they are better off without the Defendant purchasing their products, but prefers the Defendant go buy his seed from a source where Monsanto gets nothing. This seems to be a little short of logic.

Defendant disagrees with the 4th factor of the four factor test, because some of the public are stockholders. Would the stockholders prefer the Defendant not be able to buy their product, thus forcing him to buy a competitor's seed.

Appendix L

In the last chapter where Monsanto feels they are entitled to a permanent injunction if the Court rules in their favor; Defendant does not believe Monsanto and their stockholders would benefit.

IV CONCLUSION

The Material facts of this case are very much in dispute.

Since Defendant's 1st use of Roundup Ready(R) labeled seed, he has not saved any seed to plant the next year. Defendant has always returned every year to a licensed dealer for his 1st-crop soybean seed.

On occasions throughout Affiant's farming career, he has gone to a local grain dealer to purchase commodity grain to plant in risky situations. This was done many years before the invention of Roundup Ready(R) seed. Since the invention of patented seed Defendant's use of Roundup Ready seed(RR seed) has been limited to 1st-crop beans. Since 1999, Defendant has used commodity grain as seed for his 2nd-crop or risky plantings. Because grains of all types have been purchased from grain dealers for generations, one would think that Monsanto would have to take the initiative to prevent the use of commodity grains with their patented traits from being used as seed. This is especially true when they knew about the First Sale Doctrine. They also knew that no special law was passed to exempt self-replicating Utility patents from this doctrine. Monsanto is claiming that Defendant should have known that commodity beans would likely

have their patented traits, thus illegal to plant and save the resultant seed. Defendant claims it was Monsanto's responsibility to protect their patents, because of the long standing practice of using all commodity grains as seed. Monsanto could have done this with more provisions in their tech agreements or using their Terminator gene. Instead Monsanto is trying to play, Gotcha, with Defendant by claiming they do not have to let it be known that a patent exist or where it exists. Defendant claims that since Monsanto has detailed instructions in their tech agreements about what a farmer can and cannot do with their patented traits; they should be required to notify farmers that it would be an infringement on Monsanto's patents to use commodity grain as seed if it contained any of Monsanto's patented traits:

When Defendant sent a letter to Monsanto on May 5, 1999 asking if he could keep R.R. seed and pay the tech fee (See First Affidavit of Vernon Hugh Bowman 7-1&2). Defendant did not defy Monsanto or admit he had.

Since Monsanto's first letter to Defendant, Jan 8, 2007, saying that he might be guilty of saving seed; Defendant admitted he had used commodity grain as seed. Defendant admitted that most of the grain had R.R. resistant traits. Defendant did not admit that the grain and its traits were under Monsanto's patent rights. Defendant sent many letters to Monsanto between Jan 8, 2007 and Apr 6, 2007 asking why it was illegal to use commodity grain that contained Monsanto's patented traits. Monsanto did not say why their patents were not invalid or exhausted. Monsanto did keep repeating that

Defendant was not authorized to use their patented traits. But, Monsanto did not explain what legal authority gave them the right to prevent Defendant from using Pioneer's patented traits. Defendant did not consider it appropriate for Monsanto to tell him he was not authorized to buy Pioneer's seed when Monsanto did not notify Pioneer or explain to the Defendant why they had the legal right to do so. When Pioneer told Defendant that they were willing to sell him their seed until a third party directed them not to; Defendant decided to ignore Monsanto's warnings of unauthorization. Refer to Defendant's letters in the Second Affidavit of Vernon Hugh Bowman.

There are several concerns in the legal profession about Monsanto's Utility Patents being given for plant traits. Here are some of the concerns. 1. Corn cross-pollination is a big factor. If Monsanto's patented traits invade a farmers conventional corn field, who owns the traits. Could the invaded farmer select out the traits he wanted and develops his own hybrids. 2. Who is responsible for damages done by trait invasions; is it Monsanto or a farmer. 3. Since the invention of R.R. seed there have been no laws passed that clearly explains what rights Monsanto has in commodity grains. 4. The problem caused by a Utility patent being able to replicate itself has not been adequately addressed by the U.S.P.T.O. or Congress. Some of these concerns are discussed in Defendant's letter to Dr. Neil E. Herl of Iowa State University and his reply to Defendant. See Third Affidavit of Vernon Hugh Bowman.

Monsanto has tried to compare previous cases of infringement with Defendant's case. Defendant has never

found a case where Monsanto has successfully sued a farmer for using commodity grain as seed. Thus proving that the First Sale Doctrine of Exhaustion does not apply to Monsanto's Roundup Ready(R) patents.

Defendant claims that Monsanto's lawsuit is frivolous and damaging. It seems Monsanto is trying to use the Courts to strike fear in farmers so they will do nothing that might displease Monsanto even if the farmers' actions are within the law. Defendant claims that Monsanto is misusing their patent rights.

Defendant is attaching the Affidavit of Glen Apple. It explains the problems caused by the transfer of seed provisions in tech agreements. This will be marked Defendant Exhibit #4.

Three other Affidavits will also be attached. Exhibit #1 will be the First Affidavit of Vernon Hugh Bowman. Exhibit #2 is the Second Affidavit of Vernon Hugh Bowman. Exhibit #3 is the Third Affidavit of Vernon Hugh Bowman.

WHEREFORE, Defendant, Vernon Hugh Bowman, prays that the Court finds in his favor an rules the following: (1) Enter a Judgment for 20,000.00 plus interest to compensate Defendant for Attorney fees caused by Monsanto's frivolous Lawsuit. (2) Enter an order causing Monsanto to print notices in all farm magazines or publications stating that farmers are allowed to purchase commodity out-bound grain, with or without Monsanto's patented GMO traits from licensed grain dealers, even

if they plan to plant the grain for a crop. (3) Enter a judgment for the cost of expenses and costs of time spent by Defendant to defend himself against Monsanto. (4) Such other relief as the Court may deem appropriate.

Respectfully submitted by:

/s/_____

VERNON HUGH BOWMAN
21488 E. State Road 58
Sandborn, Indiana 47578
Telephone: (812) 694-7129
Nov 17, 2008

APPENDIX M — EXHIBIT 2 TO DEFENDANT'S RESPONSE TO PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT - LETTER FROM PATENT ATTORNEY FOR MONSANTO COMPANY TO VERNON H. BOWMAN, DATED JUNE 11, 1999

[MONSANTO COMPANY LETTERHEAD]

June 11, 1999

Vernon H. Bowman
A.A. #1 Box 60
Sandborn, IN 47578

Registered Mail
Return Receipt Requested

Dear Mr. Bowman:

Your letter of May 5 has been given to me to reply. You told us that you have saved Pioneer 94B01 Roundup Ready® soybeans and intend to plant this saved seed. You asked for either a copy of the applicable law or a complaint by June 15, 1999 or that you "would consider it lawful for me to plant harvest, and sell to a grain elevator the beans produced from the Round-Up seed I saved."

The applicable law related to patent infringement is Section 271 of Title 35 of the United States Code. That Section of the law begins as follows:

Appendix M

Sec. 271. Infringement of Patent

(a) Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.

I am enclosing a copy of the 1999 Monsanto Technology Agreement, which has a list of the patents that cover Roundup Ready Soybeans. This statute covers all types of patent infringement, including infringement of the patents that cover Roundup Ready soybeans. Planting of seed that is covered by a patent would be making the patented invention and using the patented invention. Selling it to the elevator would be selling the patented invention.

Because planting saved or "brown bag" soybean seed is a common practice for some growers, it is important growers are aware that Roundup Ready soybeans are patented and their responsible use is different from that of other soybeans. Roundup Ready soybean seed may not be saved for replanting and may not be supplied to anyone else for use as seed. "Brown bag" Roundup Ready soybeans may not be sold or purchased for planting. This applies to all brands of Roundup Ready soybean seed, whether or not a Monsanto Grower Agreement was signed.

Newly purchased Roundup Ready soybean seed provides many valuable benefits that growers do not get with saved seed, including:

Appendix M

- Superior quality control which can help growers
  - * better manage the risk of contamination with seed that is not tolerant to Roundup Ultra™ herbicide
  - * obtain optimum seedling vigor
  - * achieve maximum genetic yield potential of the soybean variety
- Broad selection of Roundup Ready soybean varieties, over 1200 varieties are expected to be available for 1999 planting, including 300-600 new varieties
- Technical support from Monsanto and seed companies

Biotechnology allows improvements not possible through traditional breeding. Developing improved crops through biotechnology requires a substantial investment. U.S. patent laws recognize this and encourage investment in new technology. It is illegal to save Roundup Ready soybean seed and it is illegal to sell or purchase "brown bag" Roundup Ready soybean seed. In addition to the U.S. patents listed on the seed bags, Roundup Ready soybean seed is covered by U.S. patent 5,633,435 and Monsanto considers unauthorized use or sale of Roundup Ready soybean seed to constitute a violation of Monsanto's rights under that patent. U.S. Patent Law provides significant penalties.

Appendix M

You asked about paying a fee to allow planting of the saved seed. Monsanto does not license these patent rights separately from purchase of seed, so that alternative is not available.

Very truly yours,

/s/_____

Jon Beusen
Patent Attorney for
Monsanto Company

Roundup Ready® Roundup Ultra™ are trademarks of Monsanto Company.

APPENDIX N — DEFENDANT'S SURREPLY TO PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT OF THE UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRE HAUTE DIVISION, FILED DECEMBER 31, 2008

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
TERRE HAUTE DIVISION

Case No. 2:07-CV-00283-RLY-WGH

MONSANTO COMPANY AND
MONSANTO TECHNOLOGY, LLC,

Plaintiffs,

v.

VERNON HUGH BOWMAN,

Defendant.

DEFENDANT'S SURREPLY

Now comes Defendant, Vernon Hugh Bowman with his surreply to Monsanto's Plaintiffs' Reply in support of their Motion for Summary Judgment.

Defendant's use of commodity grain as seed does not require Monsanto's authorization for the following reasons.

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1. Commodity grain's ancestors are unknown by the grain dealer who purchased the grain from the selling farmer.

2. If a farmer sells grain that came from patented seed, his growers agreement allows him to sell the grain to a dealer of his choice without declaring or stating anything about the grain's ancestors.

3. Commodity grain cannot be considered 2nd generation seed, because 2nd generation seed has to be the result of planting labeled or tagged seed. Since grain dealers are allowed to mix all varieties of similar grain together, there is no way to determine what generation commodity grain would belong.

4. Farmers have long been buying commodity grain and planting it for various reasons and no laws prevent this practice today.

5. Commodity grain is not seed. Seed has to be tagged and labeled. Seed laws do not pertain to grain traded as grain. Defendant purchased out-bound grain from a grain dealer.

6. When a farmer (licensee) sells Monsanto's second generation seed to grain dealer without any restrictions; Monsanto's patents are exhausted.

7. It is illegal for a grain dealer to sell commodity grain as seed.

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In Monsanto's Introduction the plaintiff claims Defendant admits to engaging in the complained of activity in his pleadings and response. Defendant has never admitted to infringing or missing any of Monsanto's patents. Monsanto further states that Defendant devotes his Response to two erroneous conclusions of law: 1) Monsanto had no patent rights protecting the seeds used by Defendant. Defendant has never suggested Monsanto had no patent rights protecting the seed he purchased from Pioneer. That is why Defendant has never saved any patented seed purchased from any source. 2) If Monsanto did have patent rights protecting the seeds used by Defendant. Monsanto's patents are unenforceable because of "The First Sale Doctrine of Patent Exhaustion." Monsanto claims The Doctrine does not apply. Defendant claims that a farmer grower is a licensee of Monsanto. When he sells his patented grain to a licensed grain dealer with no patent conditions attached to the sale and the dealer mixes GMO and NON-GMO grain together; this sale becomes the First unconditional sale of a former patented product. A farmer's grower's agreement gives the farmer the right to sell his grain to a licensed grain dealer with no mention of conditions to be attached to the sale. Since a licensee of Monsanto (the farmer) has sold the grain without any conditions attached, Monsanto cannot now claim they, the patentee, did not sell this grain. The patent on this grain is now exhausted.

Section I. Titled There is no Genuine Issue of Material Fact That Precludes Judgment as a Matter of Law in Favor of Monsanto

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Monsanto claims that Defendant has admitted facts that indicate he infringed on Monsanto's patents. Here is an example of one of their claims. On page 5, bottom para: Monsanto claims that Defendant does not dispute the fact that he knew as early as 1999 that planting second generation seed containing the Roundup Ready® trait was not authorized by Monsanto. Defendant did indeed know the above fact, that is why he did not save any patented seed. Defendant does not prove that he infringed on Monsanto's patents by admitting to facts similar to the "1999 fact."

In cases such as *Monsanto v. McFarling, Monsanto v. Scuggs*, and others, none of the defendants purchased commodity mixed grain of different varieties to plant. These defendants knew they were buying second generation patented seed. These cases are not related to Defendant's. Defendant had no way of knowing the type of grain he was buying to plant.

On page 6, top of the page: Monsanto claims that Defendant admits that he regularly purchased seed containing Monsanto's patented seed technology from an unauthorized dealer, a commercial grain elevator, for planting his second crop soybeans. This claim is fundamentally false for these reasons. (1) Defendant could not know the plant traits of the grain he purchased until they were growing. (2) Any patents covering certain traits would have been exhausted by the 1st sale doctrine, thus not Monsanto's patented seed technology. (3) The commercial grain elevator was selling out-bound grain and not seed; therefore, the elevator was not an unauthorized dealer.

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Defendant feels that Monsanto should not be allowed to bring the "435" patent into play at this time since it was not used in the original claim.

Section II. Titled: It is Undisputed that Defendant Planted Seed Containing Monsanto's Patented Traits.

Monsanto claims that it is undisputed that Defendant's second crop soybeans contained Monsanto's patented seed technology. This claim is very much in dispute. Dr. Koppatschek and Dr. Hannah would have been unable to determine if the traits they found came from traits that were patented or traits that were patent exhausted. For this reason Defendant saw no reason to challenge the experts' conclusions, because their testimony was meaningless.

Defendant admits that almost all the grain he used as seed for his second crop beans were resistant to glyphosate-based herbicides. Defendant has claimed from the beginning that the grain used as seed for his 2nd crop beans came from patent exhausted out-bound commodity grain.

On page 8 3rd para: Monsanto again refers to the "435" patent that was never mentioned in the original claim.

Section III. Titled: Monsanto's patents are Not Exhausted.

Monsanto claims that Defendant's response using the First Sale Doctrine of Exhaustion fails for two reasons.

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First. Monsanto says Patent Exhaustion is an affirmative defense and Defendant did not assert an affirmative defense. Thus the Court should disregard this argument. Defendant admits he does not know what an affirmative defense is. Defendant feels that if reason is to prevail, the pointing out that a patent is exhausted should have merit.

Second. Monsanto claims it has never made an unconditional first sale of its patented soybean seed technology. This may be true. But, Monsanto has made or authorized its first uncondition sale of its patented grain or seed. This is because a farmer grower is a Monsanto licensee who has authority to sell his patented grain to a licensed grain dealer with no conditions placed on the dealer. Thus when a grain dealer sells commodity mixed out-bound grain to a farmer; this sale is another uncondition sale. Neither the farmer or the dealer knows anything about the ancestry of the grain. The farmer will have to plant the grain and test it before he will know what post emergent weed killer he can use. Since no patents or other agreements are involved the farmer should be free to save the resultant grain to plant later.

Monsanto says the exhaustion doctrine does not apply where there has been an expressly conditional first sale or license. The exhaustion doctrine applies to the first unconditional sale and not the unconditional first sale.

Monsanto claims there can be no patent exhaustion without a sale of second generation by the patentee. A farmer is a licensee of Monsanto. When a Monsanto licensee (farmer) sells his second generation seed to a

grain dealer with no restrictions attached; the grain is no longer under Monsanto or patent control.

Monsanto claims an unrestricted sale must be made by the patentee. This is false. The licensee of a patentee can make an unrestricted sale. Pioneer's grower's agreements clearly give the farmer (licensee) the right to sell his second generation seed or grain to a grain dealer.

In Monsanto's attempt to disregard the *Quanta v. LG Elecs* ruling as it pertains to this case; they are again trying to claim that for patent exhaustion to apply the patentee must make an unrestricted first sale. This is wrong, it is the first unrestricted sale.

Monsanto claims it never sold its technology without restriction and did not sell the second generation seed used by Bowman. Again these claims are invalid because of the following reasons. (1) Monsanto thru their licensees (farmers) sold patented grain to grain dealers with no restrictions. (2) This grain was put in commercial storage with many different varieties, thus it is no longer considered second generation seed. (3) Bowman did not buy second generation seed from an elevator. He purchased commodity mixed grain with no patents attached.

If Monsanto wants to prevent farmers from planting commodity grain they should have a clause in their grower's agreement that clearly explains how a farmer is to sell his patented grain and still keep Monsanto's patents intact. They could use their Terminator gene. They have done neither.

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CONCLUSION

Defendant Respectfully asks this Court to grant a Summary Judgment in his favor and find that Monsanto has filled a frivolous lawsuit. Defendant prays the Court will award him damages caused by Monsanto as it sees fit.

Respectfully submitted by

/s/_____

Vernon Hugh Bowman Defendant
21488 E. State Road 58
Sandborn, Indiana 47578
Telephone: (812) 694-7129
Dec. 31, 2008

APPENDIX O — DEFENDANT'S RESPONSE TO THE COURT ORDER REQUESTING FURTHER SUBMISSIONS ON SUMMARY JUDGMENT OF THE UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRE HAUTE DIVISION, FILED JULY 14, 2009

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
TERRE HAUTE DIVISION

Case No. 2:07-CV-00283-RLY-WGH

MONSANTO COMPANY AND
MONSANTO TECHNOLOGY, LLC,

Plaintiffs,

v.

VERNON HUGH BOWMAN,

Defendant.

DEFENDANT'S RESPONSE TO THE COURT ORDER REQUESTING FURTHER SUBMISSIONS ON SUMMARY JUDGMENT ISSUED ON JUNE 11, 2009

Now comes Defendant, Vernon H. Bowman, to respond to the Court's order requesting further submissions on Summary Judgment.

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I. Issues With the Court's Factual Background

Under the Factual Background of Court Document 93, page 2, the Defendant would like to comment on the last sentence of the last paragraph. This sentence states: There appears to be no question that this biotechnology allows for a more bountiful harvest than could otherwise be expected. Defendant has shown this order to other farmers. Most feel that a more bountiful harvest has not been proven. They feel this technology has made weed control very much simpler and probably cheaper. Also see page 3, para. 2 of Est. Damages by Drs. Taylor and Fairchild. Beginning with Reddy and Whiting.

Defendant wants to comment on the 1st sentence in para #2 of page 5. This sentence starts with "When Monsanto discovered that Bowman." Defendant feels that sentence could be improved and more accurate. Defendant feels the following sentence best describes the situation. When Bowman 1st started using commodity grain as seed for his second crop beans in 1999; he would tell farmers, seed dealers, and company representatives what he was doing and would ask them if they thought it was illegal. Defendant would mention this at seed meetings or any place the subject of Roundup Ready technology came up.

Defendant feels that patent exhaustion is not his only defense of this lawsuit. Defendant is sure Monsanto knew or should have known that farmers have used commodity grain as a source of seed for as long as there has been commodity grain. Only recently have companies been able to obtain a utility patent for plant traits that belong

to seed producing plants. Historically utility patents were given only to non-living items. There has been a lot of debate about the United States Patent Office issuing utility patents for plant material that can duplicate its self and thus spread to areas where it is unwelcome and causes financial damage to neighboring farmers. However, Monsanto was given a utility patent for the Roundup Ready trait with no concern for its spreading capacity.

II. Bowman's Response

Monsanto decided to eliminate the practice of saving seed by farmers by having them sign a growers agreement before being able to use their Roundup Ready seed. Defendant's grower's agreement is with Pioneer and not Monsanto. Defendant's growers agreement allows the farmer to sell his grain to a grain dealer of his choice without any agreement between farmer and dealer. The agreement, Defendant signed, does not prohibit a farmer from using commodity grain with patented or unpatented traits as a seed source. This would have to be done with a special clause in the grower's agreement or by law. Defendant claims that no patent law exists that allows a patentee to force his patent on others or to claim infringement by allowing or causing contamination. Suppose a few farmers have been using commodity grain for all their soybean seed for many years. Does patent law prevent them from continuing to use commodity grain as seed should it contain some patented traits that got mixed in with the grain? Defendant claims it does not. What if these farmers discover a trait patented or not patented that they like and select it out for their own

use to produce a crop? Are they infringing on someone's patent? What if a farmer's non-Roundup Ready (R R) corn field is invaded with cross-pollination from a neighbor's R R corn? Is he infringing on Monsanto's patents? What if a jealous neighbor puts patented traits in his neighbor's planter? Does this planter (farmer) become an infringer? Monsanto claims the answer to all of the above questions is yes to infringement of patents. Monsanto claims it does not matter how a patented trait gets into a farmers possession, he is guilty of patent infringement if he did not buy that individual trait directly from the patentee or a licensee. This seems logically absurd. Logic would dictate that a patentee is responsible for controlling its patents. A patentee should not be allowed to let their self-duplicating patented traits invade non-patented positions or territories and then claim infringement. If Monsanto was honest about protecting their R R traits to prevent farmers from pirating these traits; they could have used one of two methods. First, they could have had their growers' agreements require farmers to sell their R R grain to pre-approved grain dealers who would segregate R R soybeans from other soybeans (are R R soybeans a true soybean). Secondly they could have used their Terminator gene to make R R 2nd generation seed sterile. Monsanto, for whatever reason, has chosen not to do this. One should be able to logically conclude that a farmer has the right to use commodity soybeans or other grains as seed, if he is willing to assume the risks of poor quality, regardless of their ancestry. This is because Monsanto does not require their R R soybeans to be segregated from ordinary soybeans by grain dealers. This fact suggest that Monsanto wants its patented R R beans after harvest to

be treated as other beans. Therefore, it should be legal to use commodity grain as seed without fear of infringement. Defendant claims that even without the Supreme Court's ruling in Quanta vs. LG, he is not infringing on Monsanto's R R patents.

This case is about patent infringement, but Defendant feels there are other issues to be considered in his defense. 1. Defendant believes that Monsanto's claim that Roundup Ready soybeans are a true soybeans borders on misrepresentation and public deception. Defendant is not a geneticist nor biologist, but when a living organism has a foreign gene or genes inserted into its genetic makeup it is simply a different species or product. Different traits makes different products. Here is an example. Suppose a business is legally selling coyotes and advertises "Coyotes For Sale." We all know that coyotes can interbreed with dogs to create coy-dogs. We also know that there are wild dogs on other continents. Suppose sales are good and the coyote supply is getting low. Should this business be legally allowed to substitute coy-dogs or wild dogs without informing their customers. That business practice would be very similar to what Monsanto has been getting away with since the 1990's. Monsanto has been allowing and encouraging their licensees (farmers) to take their patented R R beans to local elevators and selling them as soybeans, without saying a word to the grain buyer that the product was R R soybeans.

2. What do biologists consider the scientific name of Roundup Ready soybeans to be? Surely logic would not allow them to have the same name as the common soybean;

because they are an invented plant that is resistant to a weed killer that the common soybean is not.

Below is a copy of sentence #1 on page 2 of Docu. 62-2 where it says "1. Monsanto invented and developed new crop biotechnologies that involve the transfer of a gene into crop seed, such as soybeans, and that allow soybean plants to express a beneficial trait, such as herbicide resistance. Affidavit of Jerry Flint etc Exhibit I." Defendant would like to know how many foreign genes Monsanto feels it can insert into an original soybean's genetic system and the resultant plant could still legally be called a soybean?

Defendant claims Monsanto's Roundup Ready soybeans are simply not soybeans, only a close relative. It should be illegal to mix them with regular soybeans. Defendant claims it is already illegal because of laws covering adulteration. Defendant believes that Monsanto and its licensees (farmers including himself) are guilty of adulteration every time they dump R R Soybeans at an elevator without notifying the buyer. This is because the government has turned a blind eye to or winked at laws already on the books. If R R beans are accidentally mixed with soybeans, such as corn some time is, they should be considered foreign matter.

When a new plant is invented it should be given a different name. When wheat and rye were crossed, the new plant was called Triticale. If a soybean plant has different and unrelated genes inserted in its DNA, the resultant plant should not be called soybeans. A more appropriate name would be something such as Roundup

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Ready Monobeans. By insisting their new patented seed be called a soybean and allowed to be commercially mixed with non-R R beans in elevator bins; Monsanto knew their new product would be more acceptable in the market place than if it was considered a soybean substitute or replacement and had to be stored separately. A utility patent causes a product to be unique. Logic would insist that unique grain should be kept separate from its relatives if the patentee wanted to protect a patent. A Utility patent was never intended to be used for products that will or can reproduce themselves and invade another's property. It seems illogical that the USPTO would issue a utility patent for a product that can invade another's field and allow the invaded farmer to be in danger of a patent infringement lawsuit. The Patent Office should have demanded that a new type patent or new patent law to be established for genetically modified organisms before giving Monsanto a patent for R R Soybeans. Defendant feels this Court should declare the Monsanto R R patent null and void because it is unconstitutional. Nowhere in our US laws are there hints that the Constitution allows an inventor the right to patent a product that can and will invade or mix with similar products and cause patent infringements. There must be a complete overhaul of the U.S. Patent laws to deal with plants or animals. Suppose Monsanto injects a gene or genes into rabbits that makes their fur extremely valuable. Now, supposed that trait gets into the wild population; who owns the wild rabbits with Monsanto traits?

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Defendant's Answers to the Court's Questions in footnote #3 on page 9

Defendant's attention is focus on page 9 of Docu. 93 where the Court in footnote #3 has some unanswered questions. The *first question* asked by the Court was "is *commodity seed* the same as *brown bag seed*. Defendant will explain the difference. Commodity seed or grain has been dumped in an elevator bin with other grain of unknown ancestry. Usually several different varieties with different traits have been mixed together. Identity is not preserved. Brown bag seed has its identity preserved. Brown Bag seed got its name when farmers took their own seed to a seed cleaner and had it bagged. Almost without exception the bags were plain and brown. The farmer would know what variety he had bagged. A farmer might also buy a known variety from another farmer and have them cleaned. Identity is preserved in "brown bag seed," but cannot be preserved with commodity mixed grain used as seed. The *second question* asked how common is the practice of planting commodity seed. There is no such thing as commodity seed. Commodity seed would be a term used to explain commodity grain being used as seed. Before the R R era began commodity grain in the case of soybeans was used very little because farmers could save their own varieties for seed. Defendant only used commodity grain a few times before the R R era. This was when very wet years caused numerous replanting and defendant used up his saved bean seed. After R R seed came on the market it may have been used more, because a farmer could not buy non-R R beans from a neighbor that was under the Private Variety Protection

Act (PVPA). Also, he could not save his own R R grain for seed. Monsanto says that 94% of all soybeans grown in Ind. were R R. With some farmers getting a bonus for supplying non-R R grain, there could be little room for commodity grain being used as seed. Defendant has not heard of any farmers in his area using commodity soybean grain as seed. Maybe farmers are staying quiet because they are afraid of Monsanto. Defendant is sure there is a much greater amount of commodity wheat grain being used, because of sowing wheat as a cover crop and for soil erosion. So, in the case of commodity soybean grain being used as seed, it would surely be a very small practice. The *third question* asked, does Monsanto maintain that anyone who plants "commodity seed" which contains beans/seeds with the R R trait violates its patents and, if so, from a practical standpoint, doesn't that eliminate commodity seed planting as an option for farmers. The defendant would answer that with "They do and It does." In 2008 several farms in the river bottoms or other flat land had to replant beans a second time (3 plantings total). The 3rd planting was probably late June or in July. Their surely used up all their soybean seed purchased for that year. Their odds of getting a decent crop with the 3rd planting were not great. If these farms always planted R R soybeans they could not use any grain they may have had stored. They could not buy grain from a neighbor who grew non-GMO beans (plain beans) because of the PVPA. If they could not buy commodity soybean grain to plant they had 3 options. 1. They could buy expensive non-GMO seed. 2. Buy even more expensive R R seed. 3. Let the land lay idle. If the law required Monsanto to keep their patented traits separate or if Monsanto

required grain dealers to separate out their traits; a farmer could simply buy out bound grain and use other chemicals for weed control. Defendant claims the law does require Monsanto to keep their traits separate if they want to protect their patents and sue for infringements. Usually wheat beans or very late planted beans do not have nearly as much weed pressure as beans planted in early spring. Since it is almost certain that any soybeans being pulled from commercial bins will contain R R traits; Monsanto says planting them is infringement. Fear of Monsanto caused my local grain dealer (Huey Soil Service) to refuse to sell me out-bound grain after Monsanto representatives visited them (Huey) when investigating this case. Defendant believes that Monsanto is trying to go beyond their legal rights in order to scare farmers and grain dealers into submission. The *fourth question* asked, if Monsanto can legally restrict "seed saving," which the case law certainly suggests it can, does Bowman contend that the sale of harvested beans eliminates those beans from being considered as "saved?" If so, does he contend that he could simply take his Roundup Ready crop to a grain elevator, sell it, and then buy some of it right back that same day without violating the Monsanto patents? Bowman claims there are not any facts in the record that suggests the Defendant bought or tried to buy back any grain of known or unknown ancestry. Bowman has never bought back any kind of grain delivered to any grain dealer to use for any purpose. Bowman contents that if a farmer knew anything about the ancestry or traits of commodity grain he was going to plant; he would be in violation of patent law and possibly PVPA law as well. No scheming allowed. However, if Monsanto had a clause in

their Grower's Agreements that required their patented grain to be sold to elevators that agreed to keep R.R. grain segregated or used their terminator gene; scheming would be impossible.

Summary

Monsanto tries to claim they did not sell their patented grain to grain dealers (elevators) by an uncondition sale. This is clearly false. Farmers are licensees or agents of Monsanto who are allowed and encouraged to sell the grain they produced that contains Monsanto's patented traits to elevators without any restriction or conditions placed on the grain dealers. In Monsanto's Court Docu. #62-2: page 4 of 36; Monsanto clearly claims that farmers are licensees. Below is a partial copy of para.'s 13 & 14:

13. All Roundup Ready soybean seed has been sold to growers pursuant to a limited use license since Roundup Ready crop seed was introduced in 1996. Id.

14. Since introduction into the seed market, all growers have been required to obtain a limited use license to use seed containing the Roundup Ready trait. Id. At 10. These licenses permit the grower to use the seed to produce a "single commercial crop." Id. The license explicitly prohibits the purchaser from supplying the seed to any other person or entity for the purpose of planting, and from saving harvested seed for use as planting seed for a subsequent crop. Id. The license prohibits the – etc. Monsanto has been allowing farmers to sell their single commercial crop to a grain dealer of their choice without

any restrictions being placed on the dealer. This is clearly a good example of Patent Exhaustion. It is unlawful for Indiana grain dealers to sell "seed" from their grain bins. But, they are allowed and do sell out-bound grain to farmers who then plant it at their own risk of disease and poor germination (wheat would be the most common grain used as seed).

Apparently Monsanto is trying to claim that when a licensee (farmer) sells his patented grain to an elevator and it mixes the patented grain with non-patented grain (common soybeans); the contamination or pollution makes this grain mixture illegal to purchase and plant for a crop because Monsanto's traits are now in the grain. Thus, Monsanto is saying that anytime and for any reason a patented trait shows up in a farmer's field; that farmer is guilty of Patent Infringement. Monsanto is claiming logic is not logical. There is no law that hints of Monsanto's right to make and interpret their own laws to match the occasion. Monsanto appears to want their wishes to be a farmer's command or Heads Monsanto wins and Tails Defendant loses. Monsanto seems to be trying to stop all use of commodity grain as a possible substitute for commercial or labeled seed. If the use of commodity grain as seed is a danger to Monsanto's patents; why did Defendant use Pioneer R R seed on all his 1st crop beans? Defendant felt he had the legal right to use commodity beans on all his bean acres if he so desired. The answer is simple, he wanted top notch seed for a 1st crop, and was willing to pay for it. Monsanto knew or should have known that occasionally a farmer may need or want to use commodity grain as seed. So why didn't Monsanto put a clause in their

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Grower's Agreements that prevents farmers from using commodity grain as a source of seed; should it contain any of their patented traits. Monsanto has said they do not need to warn farmers about their patented traits to be protected against patent infringements. (see bottom of page 12 and top of page 13 of Docu. 62-2) That may be true, but once they have farmers to sign a grower's agreement explaining the farmers rights and obligations; Monsanto should have had to put in a clause about commodity grain as a source of seed. Defendant does not believe it is legal to require licensees to sign an agreement with Monsanto that covers most of the important issues; but leaves some issues out because they might be too objectionable, yet allows Monsanto the right to sue if used. Monsanto should not be allowed to play "gotcha."

There is a simple solution to Monsanto's problem of commodity grain with patent traits being used as seed. The solution is for Monsanto to demand that their patented traits be kept segregated from true soybeans (non traited or non patented beans). Why Monsanto did not require a licensed grower to sell his patented grain to a dealer who is legally committed to keep it segregated, is known only by Monsanto. Another solution to prevent infringement is for Monsanto to use their "Terminator gene" technology that make grain or seed sterile. This trait would have the added benefit of preventing true soybean grain from being adulterated with patented soybean substitutes; and would prevent the spread of unwanted traits to Organic crops, non-R R corn fields, and other circumstances.

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Conclusion

Monsanto has shown no proof that the use of commodity grain (grain in licensed dealers bins) is illegal to use when GMO and non-GMO grains are mixed together. See Fifth Affidavit of Vernon Hugh Bowman market Exhibit #6.

Monsanto has shown no proof that the Doctrine of Patent Exhaustion does not apply to this case of patent infringement.

Defendant believes that Monsanto's main reason for this lawsuit is to help them to prevent pirating by terrifying other farmers in Defendant's area, and not because they really think Defendant infringed on their patents. See Fourth Affidavit of Vernon Hugh Bowman marked Exhibit #5.

This is a frivolous lawsuit at best; or a Strong Arm management program to scare farmers and others into Monsanto desires.

Defendant has shown that he has never infringed on any of Monsanto's patents.

WHEREFORE, Defendant, Vernon Hugh Bowman prays that the Court will enter a Summary Judgment in his favor.

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Respectfully submitted by:

/s/_____

Vernon Hugh Bowman Pro Se
21488 E. State Road 58
Sandborn, Indiana 47578
Telephone: (812) 694-7129
Dated: July 14, 2009

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FOURT AFFIDAVIT OF VERNON HUGH BOWMAN

I, Vernon Hugh Bowman, being first duly sworn upon his oath affirms:

1. Affiant is 72 years of age, a farmer by occupation, unmarried with no children.

2. Affiant has been a farmer around Sandborn, Indiana since 1970.

3. On Tuesday July 7th, 2009, at approximately 3:00 P.M. Affiant called a Mr. Vaughn Huey to find out if he had read a copy of an affidavit prepared by Affiant for him to sign. He said he had, but did not want to sign the affidavit, because of fear of Monsanto.

4. Affiant has enclosed an exact copy of the blank affidavit given to Mr. Huey to read and sign.

5. Shortly after Affiant ended his phone call with Mr. Huey; a Mr. Mike Hartsburg came to visit. Affiant told him about Mr. Huey being fearful of Monsanto. Mr. Hartsburg seemed to thank that farmers in general are fearful of unwarranted legal reprisals from Monsanto.

I affirm under the penalties of perjury that the facts and statements set out in the foregoing affidavit are true to the best of my knowledge, information, and belief.

Dated this 14th day of July, 2009

/s/_____
Vernon Hugh Bowman

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FIRST AFFIDAVIT OF VAUGHN HUEY

Vaughn Huey, being first duly sworn upon his oath affirms:

1. Affiant is __ years of age, a farmer and license grain dealer, married with two children.

2. Affiant has been a farmer and license grain dealer (thru Huey Soil Services) around Sandborn, Indiana since 19__

3. During that time, Affiant has grown corn, wheat, and soybeans. He has also bought and sold grain thru the Huey Soil Service grain elevator.

4. Affiant states that Huey Soil Service has never been legally informed to keep different varieties with different traits separated from their common ancestors.

5. Affiant states that no authority has ever informed Huey Soil Service that selling commodity grain to a farmer (who Huey Soil knows is going to use the grain as seed) to plant is illegal or violates another's property rights (such as PVPA or Patent rights).

6. Affiant states that he believes that every year, Huey Soil sells some commodity grain to farmers to plant. He further states that this is not a common practice because farmers want to know the variety they are going to plant. Plus they want the latest in technology that new varieties offer.

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7. Affiant states that Huey Soil has never bought grain from a farmer and then sold that same grain back to the farmer, so that the farmer could attempt to vacate patent or other laws.

8. Affiant believes there is no proof that Roundup Ready beans have allowed for a more bountiful harvest; but does make a simpler herbicide program.

9. Affiant states that his belief is that brown bag seed and commodity grain used as seed are two different products. Brown bag seed got its name when farmers took their grain to a seed cleaner who almost always used a brown bag when bagging the grain or seed. Brown bag seed always maintained its identity. The farmer knew what variety the brown bag held. With commodity grain turned into seed, the farmer has no idea what varieties he will plant. This assumes the grain dealer mixes his bought grain in his bins and does not separate for certain traits.

10. Affiant states that Huey Soil mixes all of its incoming same type grain.

11. Affiant states that wheat is the commodity grain most commonly bought by farmers to plant. Soybeans would be a distant second.

12. Affiant believes that any commodity soybeans he has sold, over the years, was used to plant after wheat or a very wet season.

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I affirm under the penalties of perjury that the facts and statements set out in the foregoing affidavit are true to the best of my knowledge, information, and belief.

Dated this __ day of June, 2009

Vaughn Huey

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FIFTH AFFIDAVIT OF VERNON HUGH BOWMAN

I, Vernon Hugh Bowman, being first duly sworn upon his oath affirms:

1. Affiant is 72 years of age, a farmer by occupation, unmarried with no children.

2. Affiant has been a farmer around Sandborn, Indiana since 1970.

3. Affiant has used commodity wheat and soybeans sparingly throughout his farming career.

4. Commodity grain has been used for seed before the wheel or Patent laws came into existence. There can be no patent of the use, of commodity grain, unless it is a new plant with a new name.

5. Before the lawsuit, when Defendant was corresponding with Monsanto's legal counselors at Husch & Eppenberger, LLC and Frilot Partridge L.C. Defendant asked both firms to explain why his use of commodity grain was illegal. Monsanto failed to give a direct answer.

6. There are no U.S. or Indiana laws that prohibits a farmer from buying out-bound grain and using it to replace commercial seed.

7. No law gives Monsanto permission to contaminate commodity grain, a historic source of seed, with patented traits and then claim patent infringement if the grain is used as seed.

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8. Monsanto has not shown the Court where a farmer has been found guilty of patent infringement for planting commodity grain.

9. Monsanto has never prosecuted a farmer for having R.R. corn traits in a field that was planted with non-R.R. corn. By Monsanto's standards that would be infringement of their patents.

10. It is Monsanto's opinion alone that using commodity grain as seed after it has been contaminated with their patented traits, is an infringement of their patent rights.

11. If Monsanto wants to prevent the use of commodity grain with their patented traits from being used as seed by farmers; they must be required to call their grain by a different name than its original ancestor. One would not be allowed to sell triticale and call it wheat or rye. So it is with Monsanto's Roundup Ready soybeans. They are not soybeans. They are a new type of bean.

12. There is no case law that allowed contamination of a product by a patentee (Monsanto) who later successfully sued on patent infringement.

13. There is simply no logical reason for the United States Patent and Trademark Office giving Monsanto a Utility patent for a plant trait that can be self replicated and spread throughout the world. Best example will be R.R. corn spreading into wild varieties of corn.

Appendix O

14. After the USPTO gave Monsanto its glyphosate resistant trait patent; why did it give Monsanto the trademark Roundup Ready Soybeans? It does not take a plant scientist to know that a glyphosate resistant bean is not a soybean, because nowhere in nature is a soybean resistant to glyphosate (R R). Again, it appears logic is not allowed.

15. If the USPTO issued the Trademark "Roundup Ready" only and did not include "Soybeans;" then Monsanto is guilty of misrepresentation or worse.

16. Affiant believes that Monsanto's Roundup Ready patents should be withdrawn until after there has been more debate on plant and animal patented traits. Surely better laws would be passed after the debates.

I affirm under penalties of perjury that the facts and statements set out in the foregoing affidavit are true to the best of my knowledge, information, and belief.

Dated this 14th day of July, 2009

/s/ _____
Vernon Hugh Bowman

APPENDIX P — DEFENDANT'S RESPONSE TO: PLAINTIFFS' SUBMISSION ON THE INAPPLICABILITY OF THE PATENT EXHAUSTION DOCTRINE TO THIS CASE OF THE UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF INDIANA, TERRE HAUTE DIVISION, FILED SEPTEMBER 2, 2009

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
TERRE HAUTE DIVISION

Case No. 2:07-CV-00283-RLY-WGH

MONSANTO COMPANY AND
MONSANTO TECHNOLOGY, LLC,

Plaintiffs,

v.

VERNON HUGH BOWMAN,

Defendant.

DEFENDANT'S RESPONSE TO: PLAINTIFFS' SUBMISSION ON THE INAPPLICABILITY OF THE PATENT EXHAUSTION DOCTRINE TO THIS CASE

COURT DOCUMENT # 96

Now comes Defendant, Vernon H. Bowman, to respond Document #96. Defendant has numbered every para in docu. # 96 from 1 to 24 with conclusion not numbered.

Appendix P

Para #1 Defendant admits that he does not understand the principle of affirmative defense. Defendant has tried to present a logical defense. Monsanto is claiming that even if Bowman's buying and planting commodity soybeans was not an infringement because patent rights were exhausted; his growing and harvesting the progeny of those seeds was an infringement. Defendant claims that planting grain that has lost its patent rights and then harvesting the progeny of that grain is not an infringement of a patent. Defendant claims no logic or legal basis in that argument. New seeds grown from patent rights exhausted grain does not have to be sold by the original patentee or its licensees in order for the planter of exhausted grain to have a legal and non-patented crop. A patent lost seed can only produce patent lost grain.

Para # 2: Monsanto is trying to claim Bowman cannot prove he even purchased an original source of patent rights lost glyphosate resistant commodity grain. Bowman has shown sales tickets where he purchased commodity grain from Huey Soil Service. Monsanto claims that Bowman's defense would require him to prove that the grain he purchased from the grain elevator was an authorized sale by licensees and not by infringers. Bowman needs to only prove that he legally purchased grain from a licensed grain dealer; who legally purchased that grain without any restrictions placed upon the grain dealer. It should be Monsanto who has to prove that the grain dealer and Bowman conspired to obtain illegal grain. Monsanto has admitted that over 90% of the soybeans planted in the U.S. were Roundup Ready. Without a doubt, most of the R.R. soybean grain went to grain dealers throughout the U.S. It is almost impossible

for Bowman to have purchased pirated grain from Huey grain. The odds are overwhelming against an individual pirated kernel of grain getting into Bowman's sample. Bowman claims it should be Monsanto that has to prove Bowman did not purchase legally sold patent exhausted grain. Once an elevator legally buys and mixes grain that has different traits (whether patented or non-patented), that grain becomes only grain with no special privileges.

Para # 7 in Background: Bowman claims that this paragraph is surely irrelevant to this lawsuit. It proves Bowman's claim that Monsanto should have required their licensees (farmers) to sell their patented traits to grain buyers who were preapproved by Monsanto, or back to Monsanto or have used their Terminator gene technology. Monsanto has no right to try to destroy a historical source of seed by allowing and encouraging their licensees to contaminate commodity grain and then suing farmers who might wish or need to plant some of that grain.

Para # 8 in Background: Bowman has never needed a license to use commodity grain any way he decides. No law has ever required farmers who purchased commodity grain to plant to buy a license. The fact that Monsanto has allowed their licensees to dump their patent traited grain in with common soybean grain is Monsanto's problem and no one else's.

Para # 9 in Argument A: Of course the grain produced by Bowman after he planted his non-patented glyphosate resistant commodity grain (created by willful contamination of commodity grain or by the Doctrine of Patent Exhaustion) could not be sold by Monsanto because

they had no right to the non-patented grain produced by Bowman. Monsanto's reasoning is weird.

Para # 10 thru 15 in Argument A: Monsanto seems to be claiming that their R.R. utility patent rights cannot be exhausted even if it can be proven that the grain a farmer purchased from a grain dealer is not legally patented. They claim that when the patent exhausted grain with glyphosate resistance is planted; the offspring automatically revert back to being under their patents because these newly produced beans were not sold by Monsanto or their licensees. This is strange logic. Monsanto is saying when a plant trait they hold a patent on is found any place for any reason; the farmer who farms the land where the trait was found is an infringer. This would apply to a farmer who was producing non-GMO corn for a special market. If his corn was cross-pollinated with his neighbor's Roundup Ready corn, he would not be able to sell his corn crop for its intended purpose and he could be seriously hurt financially plus be guilty of patent infringement. Surely the Judicial system and the patent office (USPTO) never intended to give this much power to plant and animal utility patents. This has to be unconstitutional because of antitrust laws. That kind of power if legal is extremely dangerous to the nation. In paragraph # 15 Monsanto claims there is no difference between soybean seed and soybean grain and that both are simply a soybean. Monsanto cannot patent a soybean, so all their Roundup Ready related patents are null and void.

Para # 16 thru 19 in Argument B: In this part of Monsanto's argument they claim that Bowman cannot

prove that he purchased commodity grain that was sold unconditional by Monsanto licensees. What better proof of patent exhaustion than Monsanto's grower's agreements that allow their licensees to sell their patent traited grain to a grain dealer without any restrictions. Bowman has shown Monsanto copies of invoices showing that he purchased commodity grain (outbound grain from Huey Soil). Bowman agrees that there could also have been any number of sources of seed in the elevator bins that his grain came from. Bowman claims that when a seller of grain delivers this grain to an elevator; the elevator is under no legal responsibility to find out the origin of that grain. Once grain is delivered to an elevator and put in non-segregated bins, the grain then belongs to the elevator and any previous owners have no rights (Patent or otherwise) to the new commodity grain. If Monsanto did not want to lose any of their patented rights when farmers sold their grain to elevators; they should have demanded that their licensees sell to Monsanto pre-approved grain dealers. Also if Monsanto did not want any farmers to use commodity grain as a source of seed, they could have used their Terminator gene technology. Bowman also claims that even without the Patent Exhaustion Doctrine; he is no guilty of patent infringement because Monsanto either contaminated or approved contamination of commodity grain in order to prevent farmers from using a historic source of seed. No law prohibits a farmer from using commodity grain (purchased from a grain dealer) as seed if he so wishes. No law suggests that Monsanto can allow farmers (licensees) to dump their patented traits in commercial bins and claim a farmer has infringed on their patent rights when he uses this grain as seed.

Appendix P

Argument C paragraphs 20, 21, 22, 23, & 24: Let's look at para's 20 & 21. Technology Agreements' only legal purpose is to limit the farmer's (licensee) use of patented traits. Growers' Agreements (Technology Agreements) can only be applied to the person who signed it. It limits what an individual entity can do with the licensed product and it clearly gives the farmer the right to sell his patented products to grain dealers with no restrictions on grain dealers. A Technology Agreement does not apply to licensed grain dealers as Monsanto suggests in para # 21; where it says "nor could the grain elevator have passed to Mr. Bowman the right to plant the soybeans he purchased because the grain elevator itself never had that right." That statement is irrelevant because the elevator only intended to sell Bowman some of their outbound grain for a profit. Elevators sell grain not rights. They did not care what Bowman did with the grain. It is against Indiana State law for grain elevators to take grain from their commercial bins and sell it as seed. But, they are allowed to sell outbound grain to anyone to use as the buyer sees fit. Just because it is hard to protect a patent that can replicate itself is no reason for Monsanto to try and get special protection for its utility patents. Now lets look at Para. # 22: Monsanto says the Supreme Court did not suggest, much less hold, that a patentee is no longer permitted to license or sell limited rights to its patents as it chooses. Most all farmers and certainly Bowman know and accept the limitations of their Technology Agreements; however this fact is irrelevant to this case. Let's look at para # 23: What's wrong with this para., is definitely in the last sentence. It says "Thus the farmer's sale to the grain elevator was not an "authorized sale" where it resulted in

licenses soybeans being planted." Monsanto is saying that if Farmer A sells an elevator 500 bushels of his patented soybeans, and 450 bushels are processed into oil; those 450 bu. were authorized. But, if Farmer B purchased 200 bu. of commodity beans to plant, and his purchase happens to include 50 bu. of Farmer A's patented grain then the sale was not authorized. That is weird reasoning with no logical or legal precedence applied. Now lets look at para. # 24 the last para.: Monsanto says "because they never had the right to replant their crop or sell their crop for planting, farmers simply could not have sold any such right to the grain elevator." Historically, farmers have never sold rights to grain dealers; grain dealers are not in the business of buying rights from farmers. Farmers sell grain to grain dealers. The grain dealers sell the commodity grain to whoever they choose; provided, they break no laws that apply to grain dealers. Historically elevators have been allowed to sell commodity grain to farmers to do whatever they wished with the grain. Also, historically farmers have used commodity grain as seed if needed or wanted; and no law prevents this at present. It appears that Monsanto would like to write their own laws and patent the wheel.

SUMMARY

Bowman claims that farmers have always been legally allowed to purchase commodity grain (oats, barley, rye, wheat, soybeans, and others) and then use it as seed without having to obtain any rights from anybody. No laws have been passed that prevents farmers from using commodity grain as seed. Laws only prevent grain dealers

from taking grain from their commercial bins (bins containing different varieties) and selling their grain as seed. See letter from the Office of Indiana State Chemist and Seed Commissioner dated July 30, 2009; and its enclosures 1 thru 3 and 1 thru 8.

Monsanto has no legal rights to commodity grains, because they have no legal agreements with grain dealers. How soybeans with patented traits got into Bowman's commodity grain that he sowed as seed is not his concern nor his responsibility. If Monsanto wants to prevent farmers from planting commodity grains, it is their responsibility to keep their patented traits out of common grain in commercial bins owned by grain dealers; or have all grain dealers sign an agreement to Monsanto's liking.

Monsanto has enjoyed and asked that their patented grain be treated as ordinary grain by grain dealers, thus no patents are applicable to commodity grain that is stored in non-segregated bins.

The acceptance of GMO (patented traits) soybeans as common soybeans by the grain trade has allowed Monsanto to control approximately 90% of all soybean seed in the U.S. In order to gain this enormous acceptance, Monsanto has simply given away their patent rights to commodity grain. This is because they have given their licensees the right to sell (dump) into or contaminate commercial bins without any notice to the grain buyers.

Therefore, Monsanto has no legal control of commercial grain, even if the Doctrine of Patent Exhaustion never

existed. For Monsanto to have any control over commercial commodity grain they would need a Buyer's Agreement spelling out how commercial grain dealers were to handle patented grain and what they could do with it.

CONCLUSION

Monsanto has never taken any action to prevent their patent traited GMO-soybeans from being mixed in with non-GMO-soybeans. By allowing this contamination to occur in order to gain better product acceptance in the marketplace; Monsanto is also trying to eliminate the use of all commodity grains as a source of seed where it would be most appropriate.

Monsanto has never proved that patent infringement takes place when a farmer plants commodity grain contaminated by their licensees.

Monsanto has abused their patent rights given by the USPTO. U.S. patent laws have never stated or hinted that it is a patent infringement for farmers to plant commodity grain that has been purchased from a grain elevator and has patented traits mixed in with it.

Patent laws have made no attempt to deal with the problem caused by trait drift such as pollen drift with corn, accidental contamination, pollination by bees, deliberate contamination by jealous neighbors, and others. Monsanto has always claimed it doesn't matter how a patented trait gets into a farmer's field; it is an infringement of their patent rights if that trait came from a seed that was not

purchased from Monsanto or Monsanto approved seed dealers. This is logic turned up side down.

Until recently, patents for seeded plant traits could not have been patented because of the natural phenomenon. Such monumental shifts as patents for seeding plant traits and self-replicating traits, should require congressional action and not a decision by a few at the U.S. Patent Office. Apparently Congress and the U.S. Patent Office want to force our Courts to deal with the dangers caused by new technology.

A law or rule that gives a company (Monsanto) the right to claim patent infringement when their self-replicating patented traits invade a farmer's field (even though it is unwanted, because that company cannot or will not control the invasion) has to be unconstitutional.

Defendant Bowman prays that the Court will order a Summary Judgment in his favor.

Respectfully submitted by:

/s/_____

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PETITIONER'S BRIEF

No. 11-796

IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, *et al.*,

Respondents.

ON WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

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QUESTION PRESENTED

Patent exhaustion delimits rights of patent holders by eliminating the right to control or prohibit use of the invention after an authorized sale. In this case, the Federal Circuit refused to find exhaustion where a farmer used seeds purchased in an authorized sale for their natural and foreseeable purpose—namely, for planting. The question presented is:

Whether the Federal Circuit erred by (1) refusing to find patent exhaustion in patented seeds even after an authorized sale and by (2) creating an exception to the doctrine of patent exhaustion for self-replicating technologies?

PARTIES TO THE PROCEEDING

Pursuant to Rule 24.1, the following list identifies all of the parties appearing here and before the Court of Appeals for the Federal Circuit.

The petitioner here and defendant-appellant at the court of appeals is Vernon Hugh Bowman.

The respondents here and plaintiffs-appellees at the court of appeals are Monsanto Company and Monsanto Technology LLC.

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OPINIONS BELOW

The appellate court's opinion is reported at *Monsanto Co. v. Bowman*, 657 F.3d 1341 (Fed. Cir. 2011). PA1a–18a.[1]

The district court's opinion granting Monsanto Company's and Monsanto Technology LLC's motion for summary judgment of infringement is reported at *Monsanto Co. v. Bowman*, 686 F. Supp. 2d 834 (S.D. Ind. 2009). PA31a–43a.

JURISDICTION

The Federal Circuit entered judgment on September 21, 2011. This Court's jurisdiction is proper based on 28 U.S.C. § 1254(1).

STATUTORY PROVISIONS INVOLVED

The statutory appendix reproduces the relevant portions of the patent statutes at issue.

STATEMENT OF THE CASE

Respondents Monsanto Company and Monsanto Technology LLC (collectively "Monsanto") sell patented "first-generation" seeds to farmers directly or through licensed seed producers. A0026–27. Farmers use first-

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1. Citations to "A" refer to the Joint Appendix before the Federal Circuit; "Dckt." to the district court record in case 2:07-cv-283-RLY-WGH; "PA" to the Petition Appendix; "JA" to the Joint Appendix before this Court; and "SA" to the Supplemental Joint Appendix before this Court.

generation seeds for planting, a use that naturally results in the creation of progeny seeds. Monsanto authorizes farmers to sell the progeny of their first-generation seeds to grain elevators in unrestricted sales. PA8a. Likewise, Monsanto authorizes grain elevators to resell progeny seeds as part of an undifferentiated grain mixture available to the public as a commodity. A0639. Farmers refer to this mixture as "commodity grain" or "commodity seeds." PA7a; PA16a. Monsanto asserts a right to sue purchasers of commodity seeds for patent infringement when they use those seeds for planting. A0498; A0504.

A. Statement of Facts

1. Monsanto's Roundup Ready® Technology

Monsanto has altered the genetic makeup of certain plants by transferring a gene into the plants' germplasm[2] causing them to be resistant to glyphosate, the active ingredient in Monsanto's herbicide sold under the name Roundup®. JA29a ¶ 11; PA2a–4a; PA20a. Monsanto and its licensed seed producers sell seeds possessing the gene conferring resistance to glyphosate under the name Roundup Ready®. JA29a ¶ 11; PA20a. Plants grown from Roundup Ready® seeds can be sprayed with glyphosate, killing weeds without substantially damaging the crop. A0471.

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2. "Germplasm" is living tissue from which new plants can grow. This can be a seed, or it can be another plant part—a leaf, a piece of stem, or pollen. *See* Agric. Research Serv., U.S. Dep't of Agric., *Seeds for Our Future: The U.S. National Plant Germplasm System* 1 (rev. 1996).

The introduction of Roundup Ready® technology has made glyphosate the most heavily used herbicide in America and has, in the process, substantially increased overall herbicide use. *See generally* Charles M. Benbrook, *Impacts of Genetically Engineered Crops on Pesticide Use in the U.S. -- The First Sixteen Years*, 24 Envtl. Sci. Eur. 24 (2012), http://www.enveurope.com/content/24/1/24/. Although use of Roundup® is more convenient than prior weed-control methods, no evidence suggests that Monsanto's Roundup Ready® technology is responsible for more bountiful harvests. JA187a ¶ 8; *see also* Doug Gurian-Sherman, Union of Concerned Scientists, *Failure to Yield: Evaluating the Performance of Genetically Engineered Crops* 16 (2009).

2. Monsanto's Patents

Monsanto protects its Roundup Ready® technology through several patents. It asserted two of those patents against Petitioner Vernon Hugh Bowman ("Bowman"), U.S. Patent Nos. 5,352,605 (the "'605 patent") and RE 39,247E (the "'247E patent"). JA12a ¶ 4. The '247E patent explains that glyphosate kills plants by inhibiting the activity of an enzyme necessary for growth. SA10 col.1 ll.27–41. The '247E patent states that a particular genetic sequence, when inserted in the germplasm of certain seeds, produces a growth enzyme that is unaffected by glyphosate. SA10 col.1 ll.42–46; SA11–12 col.3 l.32–col.5 l.46. Monsanto's '247E patent claims a DNA molecule encoding a glyphosate-tolerant enzyme, plant cells containing that DNA molecule, plants containing such cells, the seeds of such plants, and the method of producing such plants. SA14–17 col.155 l.50–col.162 l.63. Monsanto's '605 patent claims a specific promoter (e.g.,

a DNA sequence required for production of a protein) and plant cells containing that promoter. SA4–5 col.15 l.51–col.18 l.13.

3. Roundup Ready® Seed Distribution

First-generation seeds mature at the same rate, are of uniform variety and disease resistance, and are substantially free of contaminants (e.g., other crop seeds, weed seeds, and inert matter). JA159a–60a. Sales of first-generation Roundup Ready® seeds by Monsanto or a licensed seed producer require that farmers enter into a contract with Monsanto, usually called a "Technology Agreement," and pay a corresponding "technology fee." A0004. Technology fees paid to Monsanto result in a premium price over conventional seeds. A0344 at 86:8–89:15; *see also* Charles M. Benbrook, The Organic Ctr., *The Magnitude and Impacts of Biotech and Organic Seed Price Premium* (2009), http://www.organic-center.org/reportfiles/Seeds_Final_11-30-09.pdf. By 2009, the technology fee for Roundup Ready® soybeans had risen from an estimated $4.50 to $17.50 per bag. *See* Kristina Hubbard, Nat'l Family Farm Coal., *Out of Hand: Farmers Face the Consequences of a Consolidated Seed Industry* 22 (2009), http://farmertofarmercampaign.com/Out%20of%20Hand.FullReport.pdf. The rise in seed prices has been accompanied by increased consolidation in the seed industry, leading to fewer choices for farmers. *See id.*

Monsanto imposes numerous restrictions on farmers who purchase first-generation Roundup Ready® seeds. Under a Monsanto agreement, farmers promise: (1) "to use the seed containing Monsanto gene technologies for planting a commercial crop only in a single season"; (2) "to not supply any of this seed to any other person or entity

for planting"; (3) "to not save any crop produced from this seed for replanting, or supply saved seed to anyone for replanting"; and (4) "to not use this seed or provide it to anyone for crop breeding, research, generation of herbicide registration data, or seed production." A0284.

Monsanto enforces restrictions in its agreements through suits for patent infringement. *See, e.g.*, *Monsanto Co. v. David*, 516 F.3d 1009 (Fed. Cir. 2008); *Monsanto Co. v. Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006); *Monsanto Co. v. McFarling*, 302 F.3d 1291 (Fed. Cir. 2002). By 2010, Monsanto had filed 136 infringement lawsuits against 400 farmers and 53 small-farm businesses. *See* Ctr. for Food Safety, *Monsanto vs. US Farmers: 2010 Update* (2010), http://www.centerforfoodsafety.org/wp-content/uploads/2012/03/Monsanto-v-US-Farmer-2010-Update-v.-2.pdf. Of these lawsuits, 70 ended in judgments for Monsanto, with aggregate damages totaling $23,345,820.99. *Id.*

4. Commodity Grain

Commodity grain stored in a grain elevator is an undifferentiated mixture containing several different seed varieties from numerous different farms. JA163a ¶ 3; JA172a. Commodity grain can be dirty, containing a relatively high content of debris, seeds from other crops, and weeds. Dckt. #73-2 at 62. Additionally, commodity grain lacks uniformity in maturity rate, disease resistance, drought resistance, and other beneficial traits. A0354 at 128:10–129:12; A0626.

Commodity grain's mixed, impure character makes it largely unsuitable for planting, except where a farmer requires low-cost seeds to balance the risks associated

with late-season plantings. A0343 at 83:18–84:5. Late-season plantings are inherently risky because the growing time is short, and for non-irrigated crops, there is an increased likelihood of damage due to drought. *See* Roy Roberson, *Timing Critical for Double-Crop Soybeans*, Se. Farm Press, June 30, 2009, *available at* http://southeastfarmpress.com/soybeans/timing-critical-double-crop-soybeans.

Notwithstanding the risks, late-season plantings are sometimes necessary when floods or other natural disasters destroy a farmer's fields. Late-season plantings are also necessary for "double-cropping," a widely practiced planting technique for supplementing farm income or protecting fields from soil erosion. *See id.*; *see also* Vern Grubinger, *Cover Crops and Green Manures*, *available at* http://www.uvm.edu/vtvegandberry/factsheets/covercrops.html. Double-cropping refers to planting a second crop (such as soybeans) immediately after harvesting a first crop (such as winter wheat). *See* A0343 at 82:21–85:16. Farmers have been using commodity grain from grain elevators as a low-cost seed source for generations. *See* A0627.

5. Bowman's Planting Activities

Bowman is a seventy-five-year-old farmer from Indiana. Like many Indiana farmers, Bowman makes double use of certain fields, planting a first crop of winter wheat on a particular field followed by a second crop of soybeans on that same field once the winter wheat is harvested. A0343 at 84:6–23. When soybeans are planted on a field following the harvest of winter wheat, farmers sometimes refer to them as "wheat beans." Dckt. #73-2 at 3 ¶ 7.

Beginning in 1999 on fields where Bowman did not plant double-crop soybeans, he planted first-generation, first-crop Roundup Ready® soybeans purchased from Pioneer Hi-Bred International, Inc. ("Pioneer"). PA8a–9a. Pioneer is one of Monsanto's licensed seed producers. PA8a. Bowman never planted progeny seeds grown from his Pioneer seeds. PA9a. His correspondence with Pioneer and Monsanto explains why. Dckt. #73-2 at 9–11.

Specifically, in May 1999, Bowman asked what legal authority prevented "a farmer from saving his own seed from R.R. [Roundup Ready®] Beans that were purchased from a company's legal representative" and requested a response in time for him to decide whether he could use progeny from his Pioneer seeds for late-season plantings. Dckt. #73-2 at 9. In June 1999, Monsanto responded, answering that "[p]lanting of seed that is covered by a patent would be making the patented invention and using the patented invention. Selling it to the elevator would be selling the patented invention." Dckt. #73-2 at 10.

A few years later, Bowman sought additional clarity regarding the laws that allegedly restricted disposition of purchased Roundup Ready® seeds. Dckt. #73-2 at 12. He explained that "[t]here is some concern about the right of a farmer to buy R.R. beans pay the tech. fee and then resell them to another farmer." *Id.* He also asked, "Does Federal law prevent this or is it your purchase agreement[,]" pointing out that "[t]here are millions of patented products made in America and resold legally." *Id.*

In January 2005, Monsanto evaded Bowman's direct question whether federal patent law or Monsanto's Technology Agreement governed rights in purchased

seeds. Instead, Monsanto asserted that "[g]rowers are not authorized to transfer seed[s] with these [patented] traits" and that "[r]eselling seed[s] containing these traits infringes a number of Monsanto patents including patent number 5,352,605." Dckt. #73-2 at 13.

Sometime in 2006, Monsanto requested an opportunity to investigate Bowman's planting activities. Bowman consented. Dckt. #73-2 at 15. Early in 2007, Bowman wrote to Monsanto, stating that "I have been buying soybeans from an elevator for planting after wheat. There is no way of knowing what variety I have planted. However, most of the soybeans I have purchased turned out to be resistant to Round Up [sic] related chemicals." Dckt. #73-2 at 16. Bowman, believing that he was *legally* using commodity grain purchased without restrictions from a grain elevator, asked "[w]ould you have your legal correspondent explain why my buying commercial bin run beans for planting is illegal." *Id.*

Over the next three months, Bowman exchanged several letters with Monsanto's outside legal counsel, asking repeatedly for any evidence that his use of commodity grain for planting violated Monsanto's patent rights and whether Monsanto ever provided notice or warning of this fact with respect to commodity grain. *See* Dckt. #73-2 at 17–64. In an April 2007 letter, Bowman wrote that "[t]he commodity beans I bought turned out to be mostly R.R. beans as I had hoped. I did save some of these beans for seed." *Id.* at 61.

B. Proceedings Below

Monsanto sued Bowman for patent infringement in October 2007. The complaint alleged that Bowman

willfully infringed both the '605 and the '247E patents in part because he "planted the soybean seed he purchased from the grain elevator." JA14a ¶ 14. In September 2008, Monsanto requested summary judgment, seeking a final determination as to Bowman's liability and damages. JA28a. Bowman argued that Monsanto's patent rights to the seeds he purchased from the grain elevator and their progeny were exhausted. JA120a–57a; JA192a–201a.

In June 2009, the district court requested that the parties provide additional briefing about the applicability of patent exhaustion. PA19a–20a. Specifically, the court asked the parties to address the impact that *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008), had on Bowman's exhaustion defense. PA24a–29a. In a September 2009 order, the court rejected Bowman's exhaustion defense. PA31a–43a. Relying on Federal Circuit law, the court concluded that "[n]o unconditional sale of the Roundup Ready® trait occurred because the farmers could not convey to the grain dealers what they did not possess themselves. . . . The grain elevator/dealer from whom Bowman bought the soybeans had no right to plant the soybeans and could not confer such a right on Bowman." PA41a.

Although the district court entered a judgment of $84,456.20 in Monsanto's favor (based on a reasonable royalty of acres planted with commodity soybeans), it expressed some reservations. PA37a; PA51a; A0359–73. The court said that "despite Bowman's compelling policy arguments addressing the monopolizing effect of the introduction of patented genetic modifications to seed producing plants on an entire crop species, he has not overcome the patent law precedent which breaks in favor of Monsanto . . . ." PA37a.

In September 2011, the Federal Circuit affirmed the district court's judgment. PA1a–2a. It rejected Bowman's exhaustion defense and, by so doing, refused to hold Monsanto's patent rights exhausted with respect to the seeds Bowman purchased from the grain elevator. PA14a.

The Federal Circuit further asserted that by planting commodity seeds and harvesting their progeny, Bowman "created a newly infringing article." PA14a. Ostensibly, the Federal Circuit intended this argument to serve as an independent basis for affirming the judgment, but it fails in that regard because the judgment did not rest on the number of units allegedly "made" by Bowman. Instead, it rested on the number of acres *planted* by Bowman, and there was no evidence before the district court that could have supported a judgment based on the number of infringing units allegedly "made." PA31a–43a; PA46a–48a; A0359–73.

The Federal Circuit's decision creates an exception to the doctrine of patent exhaustion for self-replicating technologies. The decision means that a patentee can reserve rights under the patent to exclude use of a patented article sold in an authorized sale whenever such use results in the creation of another generation. PA14a. By definition, use of self-replicating technology results in the creation of another generation. Under Federal Circuit law, patentees can authorize the sale of patented self-replicating technologies and, through patent infringement lawsuits, retain control over the use or disposition of patented articles and any subsequent generations resulting from lawful use.

SUMMARY OF THE ARGUMENT

For more than a century, this Court has held that "in the essential nature of things, when the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use." *Adams v. Burke*, 84 U.S. (17 Wall.) 453, 456 (1873). Following an authorized sale of anything that "embodies" the invention, the patentee "may not thereafter, by virtue of his patent, control the use or disposition of the article." *United States v. Univis Lens Co.*, 316 U.S. 241, 250–51 (1942). Patentees may, however, use contract law to enforce contractual promises that they obtain from purchasers of patented articles. *See Bloomer v. McQuewan*, 55 U.S. (14 How.) 539, 549–50 (1853).

This Court recently confirmed in *Quanta* that "[t]he longstanding doctrine of patent exhaustion provides that the initial authorized sale of a patented item terminates all patent rights to that item." 553 U.S. at 625. In *Quanta*, this Court considered whether exhaustion applied to the sale of components of a patented computer system that must be combined with additional, non-patented components in order to practice patented methods. The Court answered that question in the affirmative. In the process, it unanimously reversed the Federal Circuit's holding in *LG Electronics, Inc. v. Bizcom Electronics, Inc.*, 453 F.3d 1364, 1370 (Fed. Cir. 2006), that exhaustion did not apply to method claims and that, alternatively, it did not apply to the circumstances in *Quanta* because the sales made by the patentee's licensee were not "unconditional sales."

This case raises similar issues to those considered in *Quanta*, with the main difference being that the patented items at issue here are "self-replicating," a term used to describe technologies that replicate through normal, foreseeable use. Here, the self-replicating technology involves patented seeds that have been genetically altered to resist application of a particular type of herbicide. Monsanto places contractual restrictions on authorized purchasers of those seeds and attempts to enforce those restrictions in lawsuits for patent infringement, relying on Federal Circuit law to support its actions.

The Federal Circuit has significantly curtailed the patent-exhaustion defense as articulated by this Court, leaving Federal Circuit law in conflict with the law of this Court. According to the Federal Circuit, patent exhaustion does not apply to an "expressly conditional sale," which is a sale that imposes post-sale restrictions on the purchaser. *See id.* at 1369. Cases from the Federal Circuit establishing this rule, including *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700 (Fed. Cir. 1992), reach this conclusion by erroneously limiting this Court's exhaustion decisions. The Federal Circuit's improperly narrow reading of this Court's exhaustion decisions resulted in its incorrect conclusion that post-sale restrictions only trigger exhaustion in cases raising antitrust or patent-misuse concerns.

In past cases addressing exhaustion in the context of patented seeds, the Federal Circuit rejected the defense based on the rule established in *Mallinckrodt* that exhaustion does not apply to a conditional sale. *See Scruggs*, 459 F.3d at 1335–36; *McFarling*, 302 F.3d at 1298–99.

In the decision currently under review, the Federal Circuit rejected Bowman's exhaustion defense, relying on *Mallinckrodt* as well as *McFarling* and *Scruggs*. The seeds at issue here, unlike in *McFarling* and *Scruggs*, were purchased by Bowman as a part of an undifferentiated mixture of seeds sold as a commodity. As in *McFarling* and *Scruggs*, however, the Federal Circuit erred by failing to find exhaustion after an authorized sale, affirming the district court's conclusion that "[n]o unconditional sale of the Roundup Ready® trait occurred because the farmers could not convey to the grain dealers what they did not possess themselves." PA41a.

But this reasoning fails to recognize that exhaustion has only one requirement—an authorized sale. Whether a licensee or the patentee makes the sale, if it is authorized, it triggers exhaustion, and the item sold passes outside the protection of the Patent Act. This principle is true even if the sale is to a person who intends to use the patented article in a manner that is not authorized by the patentee, and regardless whether the purchaser in fact so uses the article. Despite this principle, the patentee can still control use or disposition of the article by contract law.

The Federal Circuit also developed an alternative (and equally invalid) argument to reject Bowman's exhaustion defense, reasoning that even if exhaustion applied to the seeds purchased as a commodity from a grain elevator, Bowman infringed Monsanto's patents because his use of the commodity seeds for planting constituted an impermissible "making" of the invention. In this argument, the Federal Circuit likened use of commodity seeds for planting to impermissible "reconstruction" of the invention. This argument fails for several reasons.

First, Bowman's use of commodity seeds for planting has nothing in common with "reconstruction." Reconstruction requires that patented articles become broken or worn out. But no parts of Bowman's seeds were broken or worn out; they were simply used. Second, the Federal Circuit's reasoning conflicts with the strong policy against extending the patent monopoly by judicial decision beyond the terms of the patent grant. This Court's cases say that such extension is the exclusive work of Congress. Finally, any reading of the words "make" and "making" from the Patent Act to include use by planting is overly broad because it would render other parts of the Act, specifically those dealing with indirect infringement, superfluous.

If patent rights in seeds sold in an authorized sale are exhausted, patent rights in seeds grown by lawful planting must be exhausted as well. Due to the self-replicating nature of the invention, subsequent generations of seeds are embodied in previous generations. Accordingly, under this Court's holding in *Quanta* pertaining to the exhaustion of method claims, the sale of a self-replicating product embodying an invention exhausts patent rights to subsequent generations that are embodied in the product sold. Similar to patented methods and products that embody those methods, the patented seeds at issue here fully embody all inventive aspects of the asserted claims. By authorizing the sale of patented seeds, Monsanto has authorized the sale of a product that can be used for practicing the patents and therefore has parted with all ability to restrict such use under the patent laws.

Additionally, farmers who lawfully use seeds purchased in an authorized sale are considered owners of the seeds they grow. Farmers have all traditional indicia

of ownership, including possession, title, control, and the right to sell. Moreover, they maintain the risk of loss with respect to the seeds they grow. Monsanto authorized the sale of seeds to farmers, and Monsanto authorized use of those seeds for planting. In this sense, Monsanto authorized the sale of subsequent generations of seeds along with the sale of any seeds having the ability to be planted and used for self-replication.

The policy against creating personal-property servitudes further supports exhaustion of seeds that farmers grow through lawful use of purchased seeds. A servitude is a restriction on use or sale that runs with property regardless of the existence of privity between the person creating the servitude and the person bound by it. For centuries, the law has refused to enforce servitudes on personal property. This contrasts with real property, where servitudes have become generally accepted.

Differences between real and personal property account for the recognition of servitudes in the former but not the latter. Notice of a restriction is easier to provide in the context of land, where the location of the property is fixed and where there is a centralized recordation system to memorialize transactions creating use or sale restrictions. Personal property, however, is comparatively cheaper than real property and cannot absorb increased transaction costs of the kind associated with a thorough title search and formalized recording. Personal property must be freely exchanged without the need for costly investigations and title verifications.

By its holding that "[a]pplying the first sale doctrine to subsequent generations of self-replicating technology would eviscerate the rights of the patent holder" (PA14a),

the Federal Circuit has created an impermissible exception to the exhaustion doctrine for self-replicating technologies. By doing so, that court has improperly usurped the role of Congress in weighing competing interests in determining the proper scope of patent rights.

Since the 1980s, when utility patent rights in seeds were first recognized, Congress has provided no exception to the exhaustion doctrine for seeds, let alone any other self-replicating technology. Twenty-five years of congressional silence is noteworthy because, where Congress intended special exceptions to the first-sale doctrine in copyright law, it signaled as much through industry-focused legislation.

Not only has Congress provided industry-focused exceptions to the first-sale doctrine for copyrights, it has passed specific legislation providing protection for certain sexually reproducing plant varieties in the Plant Variety Protection Act ("PVPA"). The PVPA includes specific exceptions for the use of first-generation and progeny seeds. These exceptions were the result of legislative action that considered the viewpoints of several competing stakeholders, including farmers, plant breeders, and the general public. No specific exceptions exist in the Patent Act because there is general, plenary exhaustion delimiting substantive rights conferred by it.

Patentees of self-replicating technologies have adequate contractual remedies to protect their interests in the use and resale of these technologies. Unlike seeds sold by grain elevators, most self-replicating technologies are not distributed as commodities. Thus, a ruling in Bowman's favor will not create a situation where patentees are unable to obtain enforceable contractual

promises restricting their purchasers' use and resale of such technologies. Further, Monsanto may enter into contracts with grain elevators and require them to impose contractual restrictions against planting on purchasers of commodity grain.

Moreover, commodity grain does not directly compete with first-generation seeds given the mixed, impure character of commodity grain. A farmer buying commodity grain for planting cannot sell his progeny in competition with Monsanto given its mixed character and unknown ancestry. Accordingly, any claim that a ruling in Bowman's favor would "eviscerate" Monsanto's patent rights is an exaggeration.

Finally, if contract law is the exclusive means by which patentees may restrict use and resale of self-replicating technologies, transactions involving these articles will be subject to antitrust scrutiny, which benefits the public.

ARGUMENT

I. THE AUTHORIZED SALE OF PATENTED SEEDS BY ANYONE HAVING RIGHTS UNDER THE PATENT TO SELL EXHAUSTS PATENT RIGHTS

A. A Patentee's Statutory Right to Exclude Others from Using, Offering for Sale, and Selling the Invention Is Exhausted by an Authorized Sale

The patent statute gives patentees the "right to exclude others from making, using, offering for sale, or selling the invention." 35 U.S.C. § 154(a)(1). This Court's longstanding patent-exhaustion doctrine delimits a

patentee's statutory rights following an authorized sale of the invention. *See Quanta*, 553 U.S. at 625.

Over 150 years ago, in *McQuewan*, this Court drew a critical distinction between purchasers of "the exclusive privilege of making or vending" a patented product and purchasers of the product itself "for the purpose of using it in the ordinary pursuits of life . . . ." 55 U.S. at 549. *McQuewan* explained that when a patented article "passes to the hands of the purchaser, it is no longer within the limits of the [patent] monopoly. It passes outside of it, and is no longer under the protection of the act of Congress." *Id.*

In *Adams v. Burke*, this Court further distinguished purchasers of patented articles from assignees or licensees of the patentee's exclusive rights. 84 U.S. at 455–56. The patent in *Adams* covered an improvement in coffin-lids. *Id.* at 456. The patentee assigned its patent rights (e.g., to make, use, and sell) within a ten-mile radius around Boston to Lockhart & Seelye and assigned its remaining patent rights to Adams. *Id.* at 454. Burke purchased patented coffin-lids from Lockhart & Seelye inside the ten-mile radius but used them outside of that radius. *Id.* Adams sued Burke for patent infringement. *Id.*

Deciding in Burke's favor, this Court explained that "when the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use. The article . . . passes without the limit of the monopoly." *Id.* at 456. After purchasing the patented articles in full compliance with the patentee's assignments, the sale was "authorized"

notwithstanding use by Burke outside the ten-mile radius around Boston. *See Hobbie v. Jennison*, 149 U.S. 355, 361 (1893) (explaining that both buyer and seller in *Adams* knew that "a use outside of the territory is intended").

Hobbie involved a similar geographic restriction on a patentee's exclusive licensee for a patent on improved pipes. 149 U.S. at 356–57. Hobbie was the patentee's exclusive licensee in several states, including Connecticut. *Id.* at 356. Jennison was the exclusive licensee for Michigan. *Id.* Jennison manufactured pipes incorporating the invention in Michigan and delivered them to a purchaser in Michigan. *Id.* The purchaser, however, transported and used the pipes in Hobbie's territory—Connecticut. *Id.* at 356–57. Hobbie sued Jennison for patent infringement, alleging that Jennison knew that his purchaser intended to use the pipes in Connecticut. *Id.* at 357.

Relying on *Adams*, this Court concluded that the licensee's knowledge about his purchaser's intentions was irrelevant and decided the case in Jennison's favor. *Id.* at 363; *see also Keeler v. Standard Folding Bed Co.*, 157 U.S. 659, 666 (1895) (stating that "as between assignees of different parts of the territory, it is competent for one to sell the patented articles to persons who intend, with the knowledge of the vendor, to take them for use into the territory of the other"). This Court also explained that the patentee's recourse in such situations could be found in contract law. *See Hobbie*, 149 U.S. at 363.

In 1912, however, this Court briefly departed from its patent-exhaustion case law. In *Henry v. A.B. Dick Co.*, 224 U.S. 1 (1912), *overruled by Motion Picture Patents Co. v. Universal Film Manufacturing Co.*, 243 U.S. 502 (1917),

this Court redefined exhaustion as involving implied-license principles. It stated that "if the right of use be confined by specific restriction, the use not permitted is necessarily reserved to the patentee." *Id.* at 24. Under *A.B. Dick*, where a purchaser of a patented product engages in use reserved by the patentee, it has violated the patent and is liable for infringement. *Id.* at 24–25.

A.B. Dick came under swift criticism. In 1913, this Court's decision in *Bauer & Cie. v. O'Donnell*, 229 U.S. 1 (1913), attempted to confine *A.B. Dick* to restrictions on using, as opposed to reselling, a patented product. *Id.* at 14–17. *Bauer* held that a notice to purchasers that the patented product "is licensed by us for *sale* and *use* at a price not less than one dollar" was not enforceable against buyers that resold the product for less than the listed price. *Id.* at 8 (emphasis added). Despite the dual restriction on sale and use, this Court construed the restriction as applying only to the right to sell. *Id.* at 16 (calling it a "perversion of terms" to view the restriction as one on use rather than sale).

Relying on similarities between the patent and copyright statutes, and precedent where it had refused to enforce resale restrictions under the copyright first-sale doctrine, this Court held that a patentee is not authorized to fix the price at which a patented product is sold after its first sale. *Id.* at 12–13 (citing *Bobbs-Merrill Co. v. Straus*, 210 U.S. 339 (1908)). *Bauer* therefore distinguished *A.B. Dick*, reasoning that "the rights and privileges which [the Patent Act] . . . bestow[s]" should not be extended by judicial construction beyond what Congress intended. 229 U.S. at 10.

Four years after *Bauer*, this Court expressly overruled *A.B. Dick* in *Motion Picture Patents*. The patentee there attempted to restrict the use of movie projectors incorporating a patented improvement through a notice affixed to the projectors stating that they be used solely with designated, but unpatented, film types. 243 U.S. at 506–08. Purchasers therefore could only use the machines with films leased from the patentee, which also retained the right to fix additional terms and restrictions on purchasers after they bought patented projectors. *Id.*

This Court confirmed that "[t]he statutory authority to grant the exclusive right to 'use' a patented machine is not greater, indeed it is precisely the same, as the authority to grant the exclusive right to 'vend'" the patented product. *Id.* at 516. Having decided that the exclusive rights of use and sale under the Patent Act do not differ in scope, and again relying on copyright precedent, this Court held that patented products, upon being "sold and paid for," are no longer subject "to any restrictions or conditions as to use or royalty which the [patentee] company which authorized its sale may see fit . . . to impose." *Id.* at 515.

In *Univis*, this Court confirmed that patentees cannot rely on patent law to restrict purchasers from using or reselling patented products following authorized sales. 316 U.S. at 248–51. Univis Corporation owned several patents covering eyeglass lenses. *Id.* at 243. It licensed Univis Lens Company to manufacture and sell lens blanks to three classes of licensees: wholesalers, finishing retailers, and prescription retailers. *Id.* at 243–44. Each of the three classes of licensees that purchased lens blanks from the Univis Lens Company entered into license agreements with the patentee, Univis Corporation. *Id.* at 244. Under

the agreements, the licensees promised, among other things, not to sell finished eyeglass lenses prepared from the lens blanks below specified minimum resale prices. *Id.* at 244–45.

The United States accused the Univis entities of violating the antitrust laws through resale-price restrictions on completed lenses prepared from the lens blanks. *Id.* at 242–43. The Univis entities argued that the transactions between them and wholesalers and retailers were valid patent licenses, protected from antitrust scrutiny by the patent grant. *See id.* at 248–49, 254. This Court disagreed because the sale of products embodying the invention—the lens blanks—exhausted Univis Corporation's patent rights to those blanks and finished lenses made from them. *Id.* at 250–51.

While *Univis* concerned the legality of a distribution arrangement involving patented products under antitrust law, its exhaustion analysis did not rest on antitrust law. Instead, the Court considered whether the patent grant shielded the patentee's conduct—resale price fixing—from antitrust scrutiny, deeming the resale-price restrictions open to antitrust review only after concluding that the patentee's rights were exhausted. *Id.* at 250–51.

In *Quanta*, this Court confirmed that the articulation of the exhaustion doctrine in *Univis* applies in the context of patent infringement. *Quanta*, 553 U.S. at 631 (stating that "*Univis* governs this case").

Since 1992, with its decision in *Mallinckrodt*, the Federal Circuit has improperly limited the exhaustion doctrine in a manner similar to the long-rejected rationale

of *A.B. Dick*. According to Federal Circuit law, patent exhaustion does not apply to an expressly conditional sale. *See Princo Corp. v. Int'l Trade Comm'n*, 616 F.3d 1318, 1328 (Fed. Cir. 2010) (en banc) (stating that "[a]s a general matter, the unconditional sale of a patented device exhausts the patentee's right to control the purchaser's use of the device" and "[t]hat [the] 'exhaustion' doctrine does not apply, however, to a conditional sale or license"); *see also B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1426 (Fed. Cir. 1997); *Mallinckrodt*, 976 F.2d at 708–09.

In *Mallinckrodt*, the patentee manufactured and sold to hospitals a medical device consisting of a manifold and nebulizer assembly used for lung scans, where the manifold contained a "single use only" restriction. 976 F.2d at 701. The devices were capable of reuse after reconditioning, which consisted primarily of cleaning them. *Id.* at 702. Accordingly, many hospitals purchased the products and, after using them, sent them to Medipart for reconditioning. *Id.* The patentee sued Medipart for patent infringement. *Id.* Despite the existence of authorized sales from the patentee to hospitals, the Federal Circuit decided that the "single use only" restriction was enforceable in a patent-infringement action. *Id.* at 708–09.

To reach that result, the Federal Circuit adopted an improperly narrow reading of this Court's exhaustion decisions, concluding that post-sale restrictions only trigger exhaustion in cases raising antitrust or patent-misuse concerns. *Id.* at 704 (concluding that this Court's exhaustion cases merely establish that "price-fixing and tying restrictions accompanying the sale of patented goods were *per se* illegal"). The Federal Circuit held that "[t]he appropriate criterion is whether Mallinckrodt's

restriction is reasonably within the patent grant, or whether the patentee has ventured beyond the patent grant and into behavior having an anticompetitive effect not justifiable under the rule of reason." *Id.* at 708.

Under this reasoning, the Federal Circuit dismissed the broader application of this Court's exhaustion cases to *any* authorized sale, characterizing the cases as including language "of exceedingly broad reach" and saying "general expressions, in every opinion . . . ought not to control the judgment in a subsequent suit when the very point is presented for decision." *Id.* at 708 n.8. Otherwise stated, the Federal Circuit read this Court's exhaustion cases as including substantial dicta. But when the Federal Circuit in *Mallinckrodt* "says that this is dictum, it is merely saying in a peculiar manner that it does not like the Supreme Court's reasoning and thinks that the Court should have held something else—that it should have reached its end result by a different conceptual route." Richard H. Stern, *The Unobserved Demise of the Exhaustion Doctrine in U.S. Patent Law: Mallinckrodt v. Medipart*, 15 Eur. Intell. Prop. Rev. 460, 465 (1993).

The Federal Circuit's limitation in *Mallinckrodt* of this Court's exhaustion cases as turning on antitrust or patent-misuse concerns is wrong. In several of this Court's exhaustion cases, it upheld otherwise potentially anticompetitive restrictions because they arose in the context of *licenses*, rather than after authorized *sales*. *See, e.g., United States v. Gen. Elec. Co.*, 272 U.S. 476, 489–94 (1926); *E. Bement & Sons v. Nat'l Harrow Co.*, 186 U.S. 70, 88–94 (1902). If this Court focused solely on the price-fixing or tying restraints at issue in such cases, without regard to whether they accompanied sales or

licenses, the cases would have been decided differently. If, as the Federal Circuit seems to believe, exhaustion turns on antitrust or patent-misuse policies, price-fixing and tying restrictions in this Court's prior cases involving licenses should have been subject to scrutiny. Instead, they were upheld.

Not only did *Mallinckrodt* improperly confine this Court's exhaustion cases to situations where post-sale restrictions were invalid under antitrust law, but it also incorrectly applied *Mitchell v. Hawley*, 83 U.S. (16 Wall.) 544 (1873). *See Mallinckrodt*, 976 F.2d at 707. In *Mitchell*, the patentee conveyed to the grantee the right to make, use, and sublicense (but not to sell) the patentee's invention (a machine for felting hats) in Massachusetts and New Hampshire during the remainder of the original patent term. 83 U.S. at 545. The agreement expressly prohibited the grantee from licensing others to use the machines beyond the original patent term. *Id.* Despite this restriction, the grantee purported to *sell* four patented machines to Mitchell. *Id.* at 549. Hawley, the owner of the patent's extended term in Massachusetts and New Hampshire, sued to enjoin Mitchell's continued use of the machines during the patent's extended term. *Id.* at 546.

The lower court granted Hawley's request for an injunction, and this Court affirmed. *Id.* The Court noted that the grantee-seller had been a mere "licensee and never had any power to sell a machine so as to withdraw it indefinitely from the operation of the franchise secured by the patent." *Id.* at 551. Further, Mitchell did not have the right to use the machines during the patent's extended term regardless whether he had notice of the grantee's limited rights or not. *Id.* This Court held that "the law

imposes the risk upon the purchaser, as against the real owner, whether the title of the seller is such that he can make a valid conveyance." *Id.* at 550.

While the *Mitchell* court did not apply exhaustion principles—because no authorized sale occurred—it did state that "where the sale is absolute, and *without any conditions*, the rule is well settled that the purchaser may continue to use the implement or machine" indefinitely. *Id.* at 548 (emphasis added). The Federal Circuit in *Mallinckrodt* improperly read this statement concerning "conditions" and other similar statements in *Mitchell* as permitting a reservation of patent rights where the patentee places post-sale restrictions on the patented product's use or resale. This reading of *Mitchell* is incorrect because a "conditional sale" during this time would have been understood to be an "agreement to sell" where *title does not pass* until performance of a condition precedent. *See, e.g.*, *Harkness v. Russell & Co.*, 118 U.S. 663, 666–67 (1886) (equating the phrase "conditional sale" with an agreement to sell upon performance of a condition precedent).

B. Conditions in a License Agreement May Be Enforced by Patent Law Where Restrictions on Authorized Purchasers Cannot Be so Enforced

Where a patentee licenses someone else to make patented products, the patentee may retain rights under the patent to control the terms upon which the products are sold. *See, e.g.*, *Bement*, 186 U.S. at 91. In *Bement*, this Court upheld a resale-price restriction imposed on a manufacturing licensee. "The owner of a patented article can, of course, charge such price as he may choose, and the owner of a patent may assign it, or sell the right

to manufacture and sell the article patented, upon the condition that the assignee shall charge a certain amount for such article." *Id.* at 93.

Similarly, in *General Electric*, this Court stated that it was "well settled" that a patentee "can exercise no future control over what the purchaser may wish to do with the article" after an authorized sale, but that "the question is a different one which arises when we consider what a patentee who grants a license to one to make and vend the patented article may do in limiting the licensee in the exercise of the right to sell." 272 U.S. at 489–90.

In *General Talking Pictures Corp. v. Western Electric Co.*, 304 U.S. 175 (1938), *aff'd on reh'g*, 305 U.S. 124 (1938), this Court held that if a purchaser knowingly buys from a manufacturing licensee in violation of a restriction in the license, both the licensee and the purchaser may be sued for infringement. In such circumstances, the sale is unauthorized, the purchaser is not "a purchaser in the ordinary channels of trade," and exhaustion does not apply. 304 U.S. at 180–82.

In the opinion issued after rehearing, this Court in *General Talking Pictures* emphasized that it was not ruling on whether a patentee can enforce a post-sale restriction on use against a purchaser, by suing for infringement, where the device the purchaser buys is (1) "manufactured under the patent" and (2) sold in the "ordinary channels of trade." 305 U.S. at 125. The seller in *General Talking Pictures* knew it was not authorized by the patentee to sell the patented amplifiers to a commercial purchaser, and the purchaser likewise knew the sale was unauthorized. *Id.* at 126–27. On these facts, *General Talking Pictures* stands for the limited proposition that where a patentee

licenses a manufacturer to make and sell the invention, the patentee can validly restrict that manufacturing licensee's ability to sell and enforce that restriction under the patent laws when the sale is *unauthorized*.

The *General Talking Pictures* principle is consistent with *Mitchell*, and with the sound observation in *Bement* that the patentee is free to decide to whom it wishes to sell (and on what terms). "Restrictions on the purchasers of patented goods, however, cannot be viewed as equivalent to [self-imposed] restrictions on the patentee itself." Mark R. Patterson, *Contractual Expansion of the Scope of Patent Infringement Through Field-of-Use Licensing*, 49 Wm. & Mary L. Rev. 157, 165 (2007).

The Federal Circuit in *Mallinckrodt* did not read *General Talking Pictures* consistently with this Court's exhaustion decisions. Instead, it read *General Talking Pictures* as permitting enforcement of "legal" post-sale restrictions by patent law, ignoring that *General Talking Pictures* involved unauthorized sales. *Mallinckrodt*, 976 F.2d at 704 (citing *Bauer*, 229 U.S. at 17; *Straus v. Victor Talking Mach. Co.*, 243 U.S. 490, 501, 516 (1917); *Boston Store of Chi. v. Am. Graphophone Co.*, 246 U.S. 8, 25 (1918)) (reasoning that "[t]hese cases did not hold, and it did not follow, that all restrictions accompanying the sale of patented goods were deemed illegal"). The Federal Circuit's position, as articulated in *Mallinckrodt*, conflicts with over 150 years of this Court's exhaustion decisions and should be expressly overruled.[3]

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3. The Government agrees that Federal Circuit exhaustion law as articulated in *Mallinckrodt* conflicts with this Court's exhaustion decisions. U.S. Amicus Br. 6.

C. This Court's Exhaustion Cases Mandate a Finding of Exhaustion for Any Seeds Purchased in an Authorized Sale

1. Authorized Sales by Monsanto or a Licensed Seed Producer

When Monsanto or one of its licensed seed producers (e.g., Pioneer) sells first-generation seeds, Monsanto attempts to reserve patent rights and enforce restrictions in its Technology Agreement under patent law. A0289. To control use of Roundup Ready® seeds by farmers, Monsanto relies on the Federal Circuit's decision in *Mallinckrodt*. *See* Dckt. #73-2 at 10. But according to this Court's exhaustion cases, Monsanto cannot assert patent law to control use or distribution of Roundup Ready® seeds sold to a farmer in an authorized sale. *See supra* § I.A.

Monsanto attempts to characterize the transactions with farmers buying Roundup Ready® seeds as a "license" to make the invention. Br. of Pls.-Appellees 11, *Bowman*, 657 F.3d 1341 (No. 2010-1068) (referring to the Technology Agreement as a "limited license allowing the grower to only grow and harvest one commercial crop"). This characterization is false. Monsanto *sells* first-generation seeds to farmers.

According to this Court's cases, the transaction between Monsanto or one of its seed producers and farmers is a sale. In *Bauer*, the patented article was a protein called Sanatogen. 229 U.S. at 8. Sanatogen was sold in packages bearing a "Notice to the Retailer" that stated that "[t]his size package of Sanatogen is *licensed* by us for sale and use at a price not less than one dollar"

and "[a]ny sale in violation of this condition, or use when so sold, will constitute an infringement of our patent . . . ." *Id.* (emphasis added). The notice further stated that "[a] purchase is an acceptance of this condition. All rights revert to the [company] in the event of a violation." *Id.* at 8–9.

Concluding that there was an exhausting sale, this Court said that "it is a perversion of terms to call the transaction in any sense a license to use the invention." *Id.* at 16. It explained that "[t]he patentee had no interest in the proceeds of the subsequent sales, no right to any royalty thereon or to participation in the profits thereof." *Id.* Further, it concluded that "[t]he packages were sold with as full and complete title as any article could have when sold in the open market, excepting only the attempt to limit the sale or use when sold for not less than one dollar." *Id.* Because there was "no showing of a qualified sale for less than value for limited use with other articles only," it reasoned that "to call the sale a license to use is a mere play upon words." *Id.*

Similarly, to call the sale of seeds by Monsanto or one of its seed producers a license is "a mere play upon words." There is no provision in Monsanto's agreements purporting to create a reversionary interest in Roundup Ready® seeds upon a violation of a restriction. Unused seeds are not required to be returned to Monsanto or a seed producer. In fact, Bowman testified at his deposition that he was not aware of any obligation to return unused seed. He further testified that it was his understanding that seed dealers would not accept returns of unused seeds where a seed bag's seal had been broken. A0336–37 at 56:20–58:13. Further, nothing in the relevant agreements

limits a farmer's right to destroy the seeds at any time and the farmer is under no affirmative obligation to plant them.

The agreements here also expressly acknowledge that Roundup Ready® seeds are "purchased." For example, the agreements specify that a farmer receives either the "[o]pportunity" or "license" to "*purchase* and plant seed" containing Monsanto's patented technology. *See, e.g.*, A0284; A0288; A0305 (emphasis added). Notably, Missouri law, which governs the Monsanto Technology Agreements and the Monsanto Technology/Stewardship Agreements, defines "purchase" as "taking by sale, discount, negotiation, mortgage, pledge, lien, security interest, issue or reissue, gift or any other voluntary transaction creating an interest in property." Mo. Ann. Stat. § 400.1-201(32) (West 2012).

The transaction between Monsanto (or a licensed seed producer) and a farmer is a sale. Once the seeds "pass[] to the hands of" the farmer, the seeds are "no longer within the limits of the [patent] monopoly." *See McQuewan*, 55 U.S. at 549. Rather, they "pass[] outside of it, and [are] no longer under the protection of the act of Congress." *Id.*

2. Authorized Sales by Farmers to Grain Elevators

Even if farmers are considered licensees of Roundup Ready® seeds, once they grow progeny seeds they are authorized by Monsanto to *sell* those seeds to grain elevators. Before the district court, Monsanto admitted that farmers "can sell it [e.g., progeny seeds] to a local grain elevator as a commodity . . . ." A0494. Monsanto again admitted during oral argument at the Federal Circuit

that sales by farmers to grain elevators are authorized. When Judge Dyk asked whether a farmer "exceed[s] the license by selling to the grain elevator without securing a promise from the grain elevator not to sell the seeds for planting," Monsanto's counsel responded, "No, I don't think the grower is exceeding his authority there . . . that is a channel of commerce that Monsanto has authorized." Oral Argument Recording at 19:34–20:14, *Bowman*, 657 F.3d 1341 (No. 2010-1068), *available at* http://www.cafc.uscourts.gov/oral-argument-recordings/2010-1068/all.

Further, farmers who sell progeny seeds to grain elevators do not place, and Monsanto does not require them to place, restrictions on those sales. PA39a (explaining that Bowman "planted progeny soybeans contained in commodity soybeans which had been sold to grain dealers without restriction"). In short, Monsanto makes no attempt to control sales made by farmers of their Roundup Ready® progeny seeds to grain elevators.

3. Authorized Sales by Grain Elevators

Monsanto also authorizes grain elevators to sell Roundup Ready® progeny seeds as part of the undifferentiated mixture of grain available for purchase. A0494. Accordingly, Bowman purchased commodity seeds in sales Monsanto authorized. Monsanto argues, however, that grain elevators are not authorized to sell grain (which includes Roundup Ready® commodity seeds) for planting. A0494. This argument is unsupported by this Court's exhaustion cases.

As this Court indicated in *Adams*, whether a sale is "authorized" by the patentee does not depend on the

purchaser's subjective, often unexpressed intent; and it is not based on what occurs *after* the sale. *See* 84 U.S. at 456–57. In this sense, Bowman does not differ from the purchasers in *Adams* and *Hobbie*. In each of those cases, the purchaser intended to use the patented product in a manner that the patentee asserted was unauthorized. *See Adams*, 84 U.S. at 456–57; *Hobbie*, 149 U.S. at 360–61. And in *Hobbie*, this Court determined that the purchaser's subjective intent to use the patented product in a manner or place unauthorized by the patentee was irrelevant. 149 U.S. at 363.

The circumstances here are similar to those in *Adams*. There, the patent assignee with the rights to make, use, and sell within the ten-mile radius around Boston did *not* have the right to use the patented coffin-lids outside that radius. 84 U.S. at 456. But after it made an authorized sale of them *within* the ten-mile radius, the purchaser benefited from the exhaustion doctrine and had full use rights outside that boundary. *Id.* The authorized nature of the sale vested full use rights in the purchaser. *Id.* Likewise, the authorized nature of sales to grain elevators results in the elevators having full use and sale rights, notwithstanding any restrictions Monsanto attempts to place on farmers who sell second-generation seeds to grain elevators.

Here, as in *Adams*, the sales were authorized at the point of sale and were not infringing. "*Quanta* clearly and unambiguously holds that patent exhaustion follows as a matter of law from any 'authorized' (*i.e.*, non-infringing) sale . . . ." Thomas G. Hungar, *Observations Regarding the Supreme Court's Decision in Quanta Computer, Inc. v. LG Electronics, Inc.*, 49 IDEA 517, 530–31

(2009). Importantly, the sales at issue here are unlike those at issue in *General Talking Pictures*, which were unauthorized by the patentee at the point of sale. 304 U.S. at 180; 305 U.S. at 126–27.

II. EXHAUSTION OF PATENT RIGHTS FOR SEEDS SOLD UNDER AUTHORITY OF THE PATENT OWNER APPLIES TO PROGENY SEEDS GROWN THROUGH LAWFUL USE

A. Like Method Claims, Subsequent Generations of Seeds Are "Embodied" in Seeds Sold in Sales Authorized by Monsanto

In *Quanta*, this Court held that method claims could be exhausted, even though "a patented method may not be sold in the same way as an article or device . . . ." 553 U.S. at 628. Despite that difference, this Court held that "methods nonetheless may be 'embodied' in a product, the sale of which exhausts patent rights." *Id.* This rule is consistent with the fundamental notion that a patentee "receives nothing from the law that he did not have before, and . . . the only effect of the patent is to restrain others from manufacturing and using that which he has invented." *Cont'l Paper Bag Co. v. E. Paper Bag Co.*, 210 U.S. 405, 424 (1908) (citing *United States v. Bell Tel. Co.*, 167 U.S. 224, 249 (1897)). Thus, the patent right exhausted by the sale of a product embodying a patented method is the right to exclude others from using that product to practice the invention. Once a patentee sells a product embodying a patented method, the patentee loses the ability to restrict use of that product to practice the invention.

This rule applies to the sale of patented seeds. As in *Quanta*, the seeds at issue here embody all inventive

aspects of the asserted claims. A0281 ¶ 6. By authorizing the sale of patented seeds, Monsanto has authorized the sale of an article that can be used to practice the claimed inventions because seeds will self-replicate by normal use. Indeed, planting is the *only* intended use for first-generation Roundup Ready® seeds.

Attempting to distinguish this Court's holding in *Quanta*, the Federal Circuit concluded that the seeds at issue here do not substantially embody all later generations "because nothing in the record indicates that the 'only reasonable and intended use' of commodity seeds is for replanting them to create new seeds." PA14a (citing *Quanta*, 553 U.S. at 631). In reaching that conclusion, the Federal Circuit noted that commodity seeds have "various uses . . . including use as feed." *Id.* But that reasoning fails to account for the fact that commodity seeds are the progeny of first-generation Roundup Ready® seeds sold by Monsanto or its licensed seed producers with only one intended use—planting. The rule in *Quanta* should be applied to the first authorized sale of an article embodying the invention. Here, that first authorized sale is the sale of first-generation Roundup Ready® seeds.

More importantly, however, the discussion in *Quanta* about whether the components at issue had a use apart from practicing the invention concerned "the extent to which a product must embody a [method] patent in order to trigger exhaustion." 553 U.S. at 630. Here, with respect to the asserted product claims,[4] there is no need to engage in that inquiry because the patented seeds *completely*

4. With the exception of method claim 130 of the '247E patent, all asserted claims are product claims. *See supra* STATEMENT OF THE CASE § A.2.

embody all features of the claimed inventions. A0280. The seeds are not "incomplete" or "unfinished" articles that merely embody "essential features" of the claimed inventions. Roundup Ready® seeds have been engineered to include everything one needs to practice the invention, and they will self-replicate.

Further, the Federal Circuit's position as to what constitutes a use sufficient to avoid the rule in *Quanta* threatens to eliminate that rule altogether. For example, the "use" discussed in *Quanta* was not any conceivable use; it was use providing utility apart from "'*practicing* the patent,' not whether those uses are infringing." *Id.* at 632 n.6 (quoting *Univis*, 316 U.S. at 249). LG argued that the components at issue could be used overseas, used as replacement parts, or engineered so that use with non-Intel products would disable the patented features. This Court rejected those arguments because "[a] microprocessor or chipset cannot function until it is connected to buses and memory." *Id.* at 632. Therefore, the Federal Circuit's attempt to distinguish *Quanta* because commodity seeds could be used for feed fails to answer the fundamental question regarding whether commodity seeds have a utility apart from "practicing the patent."

Whether Roundup Ready® seeds are planted or not, they still "practice the patent" under the reasoning employed in *Quanta* because they contain the claimed DNA sequence providing for glyphosate resistance. They cannot function at all until they are planted. As this Court concluded in *Quanta*, it makes no difference whether the patented features in the product are actually in operation; exhaustion results from the mere presence of the patented features in the product, even if they are inoperable. *Id.*

at 632 n.6 (suggesting that exhaustion would still apply where patented features were disabled). Therefore, the seeds at issue here practice the asserted product claims.

As for method claim 130 in the '247E patent, the seeds embody the essential features of the invention. Claim 130 concerns a weed-control method with two steps: (a) planting a seed or plant containing the Roundup Ready® trait; and (b) applying glyphosate to control weeds. SA19 col.165 l.49–col.166 l.5. Planting seeds has been known for generations, and glyphosate has been used to control weeds for decades—long before the '247E patent's earliest filing date. *See* Monsanto, *History of Monsanto's Glyphosate Herbicides*, http://www.monsanto.com/products/Documents/glyphosate-background-materials/back_history.pdf (last visited Nov. 30, 2012); SA9. Simply put, after obtaining Roundup Ready® seeds, the only thing needed to practice method claim 130 is "the application of common processes . . . ." *Quanta*, 553 U.S. at 633. Therefore, the seeds "substantially embod[y]" the claimed invention, and their sale exhausts Monsanto's right to exclude use of these self-replicating products to practice the invention. *Id.*

B. Use of Seeds for Planting Cannot Properly Be Considered "Making" the Invention

According to the Federal Circuit, planting a patented seed—even one purchased in a sale authorized by the patentee—is an act of infringement because it violates the patentee's right under 35 U.S.C. § 154 to exclude others from "making" the invention. PA14a. It is well settled that the exhaustion doctrine does not extend to the right to "make" a new product. *See Aro Mfg. Co. v. Convertible Top*

Replacement Co., 365 U.S. 336, 346 (1961). The Federal Circuit concluded that "once a grower, like Bowman, plants the commodity seeds containing Monsanto's Roundup Ready® technology and the next generation of seed develops, the grower has created a newly infringing article." PA14a. Rejecting Bowman's exhaustion defense, the Federal Circuit compared Bowman's use of commodity seeds for planting to impermissible "reconstruction" of the invention, citing *Jazz Photo Corp. v. International Trade Commission*, 264 F.3d 1094, 1102 (Fed. Cir. 2001). PA14a.

Bowman's use of commodity seeds for planting has nothing in common with "reconstruction." No parts were worn out and replaced; the seeds were simply used. In the context of patented seeds, use as contemplated by all parties to the first sale may simply *result in* the creation of a new item. The Federal Circuit's "reconstruction" reasoning also conflicts with the policy underlying this Court's case law. "This Court's decisions specifically dealing with whether the replacement of an unpatented part, in a patented combination, that has worn out, been broken or otherwise spent . . . have steadfastly refused to extend the patent monopoly beyond the terms of the grant." *Aro*, 365 U.S. at 342 (citing *Wilson v. Simpson*, 50 U.S. (9 How.) 109, 123 (1850)).

In its brief supporting Monsanto and arguing for denial of certiorari, the Government took the Federal Circuit's "reconstruction" argument in a wholly new direction by arguing that when planting a patented seed, "the purchaser 'uses' the sold article to 'make' a newly infringing one." U.S. Amicus Br. 14 (citing *Am. Cotton-Tie Co. v. Simmons*, 106 U.S. 89, 93–94 (1882)). This use-to-make theory seeks to carve out *permissible* and

impermissible uses under patent law for articles subject to the exhaustion doctrine, and it enjoys no support in the Patent Act or in this Court's exhaustion case law.

The Government also advanced an overly broad definition of the word "make" in the Patent Act. According to the Government, "make" as used in the Patent Act should mean "to bring about," "to cause to happen," or "to cause to exist, occur, or appear." U.S. Amicus Br. 15. The Government's definition of "make," however, is inconsistent with use of that word in the Patent Act.

Although the Patent Act does not define "make," it does separate direct infringement under § 271(a) from both forms of indirect infringement; namely, induced infringement under § 271(b) and contributory infringement under § 271(c). *See* 35 U.S.C. § 271(a)–(c). Both forms of indirect infringement hold liable those who contribute to or encourage the direct infringement of others. *See, e.g., Global-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. ___, 131 S. Ct. 2060, 2066 (2011). In particular, § 271(b) provides that whoever induces another's direct infringement is also liable for infringement. And § 271(c) provides that whoever supplies components to another knowing that the components will be used in an infringing combination is also liable for infringement. Thus, under § 271(b) and § 271(c), a person is liable for indirect infringement if they "bring about" or "cause" infringement by another.

In contrast, § 271(a) addresses direct infringement and provides that whoever "makes" a patented invention directly infringes the patent. But under the Government's definition of "make," whoever "brings about" or "causes"

an infringing product to be assembled or produced by another "makes" the infringing product themselves. As an example, someone "brings about" or "causes" an infringing product when that person induces another to produce a patented product. As another example, someone "brings about" or "causes" an infringing combination when that person provides materials to another knowing that the other will assemble the infringing combination. Thus, indirect infringement occurs when someone "brings about" or "causes" induced infringement under § 271(b) or contributory infringement under § 271(c).

Consequently, the Government's expansive definition of "make" encompasses *both* forms of indirect infringement. Anyone who "brought about" or "caused" infringement by another would be liable under § 271(a) as a direct infringer instead of under § 271(b) or § 271(c) as an indirect infringer. If that definition is adopted, then indirect infringement would be rendered superfluous. But an interpretation of one statutory provision that renders another provision in the statute superfluous is rarely, if ever, correct. *See, e.g., Bilski v. Kappos*, 561 U.S. ___, 130 S. Ct. 3218, 3228 (2010) (discussing "the canon against interpreting any statutory provision in a manner that would render another provision superfluous").

The Government's expansive definition of "make"—plucked from a dictionary—disregards the proper statutory context. As this Court explained, "A word in a statute may or may not extend to the outer limits of its definitional possibilities. Interpretation of a word or phrase depends upon reading the whole statutory text, considering the purpose and context of the statute . . . ." *Dolan v. U.S. Postal Serv.*, 546 U.S. 481, 486 (2006)

(adopting a narrow interpretation of the phrase "negligent transmission" based primarily on statutory context). Moreover, when interpreting the Patent Act, this Court has frequently rejected the position of litigants who proposed expansive interpretations of undefined words. For example, this Court has said:

> It follows that we should not expand patent rights by overruling or modifying our prior cases construing the patent statutes, unless the argument for expansion of privilege is based on more than mere inference from ambiguous statutory language. We would require a clear and certain signal from Congress before approving the position of a litigant who, as respondent here, argues that the beachhead of privilege is wider, and the area of public use narrower, than courts had previously thought.

Deepsouth Packing Co. v. Laitram Corp., 406 U.S. 518, 531 (1972).

In cases where courts have construed "making" in the context of 35 U.S.C. § 154 and "makes" in the context of § 271, those terms have been narrowly interpreted to pertain to the act of creating an "operable assembly of the whole and not the manufacture of its parts." *Deepsouth*, 406 U.S. at 528; *see also Radio Corp. of Am. v. Andrea*, 79 F.2d 626, 628 (2d Cir. 1935). Both *Deepsouth* and *Andrea* are instructive on how courts have construed "making" because they involve situations where a party was accused of direct infringement by manufacturing and shipping unassembled parts of a patented combination. These cases reject the notion that such activity can be fairly

considered "making" the invention because "we cannot say that the patented combination was complete *until physical connection is established* . . . ." *Andrea*, 79 F.2d at 628 (emphasis added); *see also Deepsouth*, 406 U.S. at 529.

The seeds at issue here will self-replicate or "sprout" unless stored in a controlled manner to prevent this natural occurrence. Humans can (and most often do) assist in the process of self-replication. For instance, Bowman planted Roundup Ready® seeds and treated them with glyphosate. This activity led in part to the creation of new soybeans having the patented Roundup Ready® trait. But it was the planted soybean, not Bowman, that "physically connected" all elements of the claimed invention into an "operable whole."

C. Title to Subsequent Generations of Seeds Vests with Farmers Who Lawfully Grow Those Seeds

Farmers who plant Roundup Ready® seeds purchased from Monsanto or its licensees lawfully own all progeny seeds. Those farmers have all traditional indicia of ownership in the progeny seeds, including title, possession, control, and the right to sell. *See United States v. Arnold, Schwinn & Co.*, 388 U.S. 365, 381 (1967), *overruled on other grounds by Cont'l T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36 (1977); *see also* Restatement (First) of Property §§ 5(e), 10(b) (1936). Those farmers also bear the risk of loss for the progeny seeds, entering into insurance agreements and paying insurance premiums to manage that risk. Risk of loss is a traditional indicator of title in personal property. *See Elgee Cotton Cases*, 89 U.S. (22 Wall.) 180, 194 (1875); *see also Schwinn*, 388 U.S. at 379–80.

Because a farmer who lawfully plants first-generation seeds owns the progeny seeds, exhaustion must apply to the progeny seeds for the same reasons that it applies to first-generation seeds purchased from Monsanto or its seed producers. In essence, exhaustion arises from any lawful title transfer. *See, e.g.*, *Cornell Research Found., Inc. v. Hewlett-Packard Co.*, No. 01-cv-1974, 2007 WL 4349135, at *55 (N.D.N.Y. Jan. 31, 2007). An authorized sale by the patentee or a person having rights under the patent results in a lawful title transfer of the product sold and, in the case of self-replicating items, the byproducts of their use. Indeed, Monsanto does not appear to dispute that title to grown seeds rests with farmers and not Monsanto or its seed producers. That title vests in someone other than the seed seller amounts to exhaustion of patent rights in progeny seeds.

Although exhaustion generally arises in the context of a sale, it would presumably apply to a gift or lawful title transfer other than a sale. *See, e.g.*, *UMG Recordings, Inc. v. Augusto*, 558 F. Supp. 2d 1055, 1059 (C.D. Cal. 2008) (explaining that, in the context of the copyright first-sale doctrine, "[a]lthough this statutory limitation is commonly referred to as the first sale doctrine, its protection does not require a 'sale.' The doctrine applies after the 'first authorized disposition by which title passes.' . . . This passing of title may occur through a transfer by gift." (quoting 2 Melville B. Nimmer & David Nimmer, *Nimmer on Copyright* § 8.12[B][1][a] and citing 4 William F. Patry, *Patry on Copyright* § 13:15)). The patentee's action vesting title to a patented article in another constitutes the key element to the exhaustion doctrine's application. *See Quanta*, 553 U.S. at 637; *Adams*, 84 U.S. at 456–57. By permitting title in progeny seeds to vest in farmers,

Monsanto has permitted exhaustion to apply to those seeds.

These principles apply with equal force to all progeny seeds grown from lawfully purchased seeds, including the progeny of commodity grain. Farmers such as Bowman who choose to plant commodity grain for their second crop lawfully own the next-generation seeds. They assume all risk of loss associated with both their purchased and grown seeds. And in the case of commodity grain used for planting second crops, farmers assume the risk that the unknown mixture of grain will produce a poor crop. JA173a. For the reasons discussed *supra* § I.C, exhaustion applies to all seeds sold in authorized sales. And because title in seeds that farmers grow vests with those farmers, exhaustion logically extends to those seeds as well.

D. Exhaustion of Patent Rights in Progeny Seeds Comports with Sound Policy Against Restraints on the Alienation of Personal Property

A determination that exhaustion applies to progeny seeds comports with the strong and longstanding policy against restraints on the alienation of personal property, which this Court has described as "hateful to the law from Lord Coke's day to ours, because obnoxious to the public interest." *Victor Talking Machine*, 243 U.S. at 501. The term "servitude" refers to a restraint on the alienation of property. *See* Restatement (Third) of Property § 1.1; *Black's Law Dictionary* 1492 (9th ed. 2009); *see generally RCA Mfg. Co. v. Whiteman*, 114 F.2d 86, 88 (2d Cir. 1940) (applying the servitude concept to personal property).

Courts generally disallowed servitudes on personal property that purported to bind successive owners when the property was sold and resold. "American precedent is largely, if not quite exclusively, in accord" with the proposition that "one cannot create servitudes in personal property." Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 Yale L.J. 1, 18 & n.68 (2000). "The common law, both in England and the United States, has traditionally favored the free alienation or transferability of property and looked askance at restrictions on alienation [servitudes], particularly if privately imposed." C. Paul Rogers III, *Restraints on Alienation in Antitrust Law: A Past with No Future*, 49 SMU L. Rev. 497, 498 (1996). "Historically, restraints on alienation of personalty as well as real property were objectionable." *Id.* at 499. As Lord Coke observed: "If a man . . . give his whole interest or property therein, upon condition that the donee or vendee shall not alien the same, the same is void, because the whole interest and property is out of him, so as he hath no possibility of reverter . . . ." 2 Coke, *Institutes of the Laws of England* § 360 (Day ed. 1812). Lord Coke's observation applied to real property as well as personal property. *See* Rogers, *supra* at 499.

To be sure, the law regarding servitudes has evolved since Lord Coke's time. Courts have realized that some servitudes, particularly those on real property, are necessary to preserve equity. But courts have always required notice of the servitude in some way, shape, or form. In *Tulk v. Moxhay*, the first case recognizing a servitude on land, the English Court of Chancery enforced against a purchaser of Leicester Square a restriction preventing the purchaser from building on the property.

(1848) 41 Eng. Rep. 1143, 1143–45 (Ch.). There, Tulk sold Leicester Square to Elms on the condition that it be maintained in a certain form as a public "pleasure ground" because after its sale Tulk continued to own homes and live around it. *Id.* at 1143. Forty years later, Moxhay bought Leicester Square from an intermediate purchaser and intended to build on it, and Tulk sought an injunction. According to the court, "[T]he question is . . . whether a party shall be permitted to use the land in a manner inconsistent with the contract entered into by his vendor, and with notice of which he purchased." *Id.* at 1144. The court held that it could enforce the agreement in equity because Moxhay purchased the property with notice of the covenant, reasoning that Moxhay's position should not differ from that of the previous owner who sold the property to him. *Id.* at 1143.

In the century-and-a-half since *Tulk*, a rather detailed body of law has developed around the creation and enforcement of servitudes on real property. The traditionally cautious judicial attitude toward servitudes rests primarily on a concern about sufficient notice. *See* Molly Shaffer Van Houweling, *The New Servitudes*, 96 Geo. L.J. 885, 893–95 (2008). Historically, doctrines such as "touch and concern," the appurtenance requirement, and horizontal privity attempted to ensure notice by limiting servitudes to those that are readily discoverable. *See id.* at 896. In other instances, courts simply required a showing of adequate notice before enforcing a servitude. *Id.* But as mechanisms for ensuring notice developed, such as deed-recording systems and title-searching procedures, the traditional limitations on land servitudes gradually eroded. *Id.* at 906.

In contrast to the land servitudes, personal-property servitudes do not enjoy widespread recognition. Unlike land servitudes, courts have rarely upheld personal-property servitudes. *See* Glen O. Robinson, *Personal Property Servitudes*, 71 U. Chi. L. Rev. 1449, 1455 (2004). This rarity reflects the practical differences between real property and personal property. In particular, real property is usually held for a relatively long period of time and undergoes a rigorous title investigation before a transfer from seller to buyer. In contrast, personal property may change hands quickly in the stream of commerce, which makes possible interferences with these quick ownership transfers undesirable. Moreover, due to the lack of a comprehensive title search, a personal-property seller has far more difficulty than a real-property seller ensuring that downstream purchasers have notice of a restriction. Further, land-use restrictions may arise from the desire to protect a piece of real property as a unit, while no analogous purpose exists with respect to personal property. *See* Zechariah Chafee, Jr., *Equitable Servitudes on Chattels*, 41 Harv. L. Rev. 945, 985–86 (1928) (discussing justifications for treating land differently from personal property).

Perhaps most importantly, however, personal property typically costs less than land. Thus, potential purchasers, even with notice of a restriction, would be less likely to devote time and energy locating and studying the restrictive terms attached to personal property. *See* Merrill & Smith, *supra*, at 44–45 (discussing the costs of processing notice). Indeed, in *Victor Talking Machine*, this Court refused to enforce a restriction printed on a plate attached to record players because "not one purchaser in many would read such a notice, and . . . not one in a much

greater number, if he did read it, could understand its involved and intricate phraseology." 243 U.S. at 501.

In the rare cases where courts have upheld restraints on personal property, the adequacy of the purchaser's notice of the restraint played a key role in the court's analysis. *See, e.g., Tri-Cont'l Fin. Corp. v. Tropical Marine Enters., Inc.*, 265 F.2d 619, 626 (5th Cir. 1959); *Nadell & Co. v. Grasso*, 346 P.2d 505, 507 (Cal. Dist. Ct. App. 1959).

Some courts, however, have declined to uphold restraints on personal property even though purchasers had notice of the restraint. For example, in *RCA Manufacturing Co. v. Whiteman*, RCA made and sold phonograph records that included a notice limiting use of phonographs for noncommercial purposes in homes. 114 F.2d at 87. Bruno-New York purchased records from RCA and resold them to W.B.O. Broadcasting, which used them to broadcast over its radio system. *Id.* The Second Circuit assumed that W.B.O. knew about the notice limiting use for noncommercial purposes. *Id.* It decided, however, that RCA had no power to impose a servitude on its records and that W.B.O. was "free to buy and use them in entire disregard of any attempt to do so." *Id.* at 90.

Similarly, in *National Skee-Ball Co. v. Seyfried*, National made and sold arcade game machines under a license that precluded use of the machines in locations where its machines were already in operation. 158 A. 736, 736 (N.J. Ch. 1936). National sold two machines to Philps, who used them according to the license. *Id.* Subsequently, Seyfried purchased those machines and moved them to a location where other machines were already in operation.

Id. at 736–37. The court noted that Seyfried knew about the license restriction. *Id.* at 737. But it still decided that National could not enforce the restriction against Seyfried. *Id.* at 737–38.

This Court has consistently refused to decide cases in a way that would create restraints against alienation of personal property. *See Bauer*, 229 U.S. at 17; *see also Victor Talking Machine*, 243 U.S. at 494; *Dr. Miles Med. Co. v. John D. Park & Sons Co.*, 220 U.S. 373, 409 (1911), *overruled on other grounds by Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007); *Bobbs-Merrill*, 210 U.S. at 351; *Keeler*, 157 U.S. at 666; *Adams*, 84 U.S. at 456.

The Federal Circuit's decision here gives patentees greater rights than sellers of unpatented goods to restrict alienation of personal property. Indeed, under Federal Circuit law, patents provide greater rights to restrict alienation than other forms of intellectual property. *See* James B. Kobak, Jr., *Contracting Around Exhaustion: Some Thoughts About the CAFC's Mallinckrodt Decision*, 75 J. Pat. & Trademark Off. Soc'y 550, 562 (1993) (noting that "a clear difference now exists" because of *Mallinckrodt* "between post-sale restrictions on patented goods on the one hand and those on copyrighted and trademarked goods on the other"). In essence, the Federal Circuit has created a new property right, never before recognized in over four centuries of property law: the personal-property servitude.

Property law has historically recognized a finite number of conveyable interests. *See generally* Merrill & Smith, *supra*; Henry Hansmann & Reiner Kraakman,

Property, Contract, and Verification: The Numerus Clausus Problem and the Divisibility of Rights, 31 J. Legal Stud. 373 (2002). If the law were to recognize each and every division by a property owner of the "bundle of sticks," property transfers would become too complex and inefficient.

On the other hand, contract law allows parties to order their rights and relationships in a far more novel and complex manner than property law. Except in very limited situations, contract law also requires privity and agreement. The possibility of contract restrictions on the use of goods does not threaten to raise transaction or search costs the way that personal-property servitudes do. And nothing about the policy for or against such servitudes has anything to do with the goals of patent law, except in an arbitrary sense of providing patent owners with special rights that might somehow further increase rewards of invention.

Here, farmers sell progeny seeds to grain elevators—as authorized by Monsanto—without providing any notice to the grain elevators of restrictions on the use of those seeds. Similarly, when Bowman purchased commodity seeds from the grain elevator, he received no notice of any restrictions on the use of those seeds. *See* PA39a; Oral Argument Recording at 19:34–20:14, *Bowman*, 657 F.3d 1341 (No. 2010-1068), *available at* http://www.cafc.uscourts.gov/oral-argument-recordings/2010-1068/all (admitting that farmers sell to grain elevators without securing a promise that the grain elevators will not sell the seeds for planting). Bowman then used his purchased seeds in a natural and foreseeable way—he planted them. To decide that exhaustion does not extend to seeds

purchased on the open market is to destroy a bona fide purchaser's reasonable and expected property interest.

III. THIS COURT SHOULD NOT CREATE AN EXCEPTION TO THE TRADITIONAL EXHAUSTION DOCTRINE FOR SELF-REPLICATING TECHNOLOGIES

A. Any Change in the Exhaustion Doctrine Should Come from Congress

The Federal Circuit created an impermissible exception to the exhaustion doctrine for self-replicating technologies, holding that "[a]pplying the first sale doctrine to subsequent generations of self-replicating technology would eviscerate the rights of the patent holder." PA14a. This judicially created exception improperly usurps Congress's role in weighing competing interests and legislatively expanding statutory patent rights.

This Court has repeatedly held that the Constitution gives Congress the exclusive power "'to promote the Progress of Science and useful Arts . . . .'" *Deepsouth*, 406 U.S. at 529 (quoting U.S. Const. art. I, § 8, cl. 8); *see also Sony Corp. of Am. v. Universal City Studios*, 464 U.S. 417, 456 (1984). Accordingly, this Court requires a clear and certain congressional signal before judicially expanding a patentee's monopoly. *Deepsouth*, 406 U.S. at 531. "Since patents are privileges restrictive of a free economy, the rights which Congress has attached to them must be strictly construed so as not to derogate from the general law beyond the necessary requirements of the patent statute." *United States v. Masonite Corp.*, 316 U.S. 265, 280 (1942).

In *Sony*, this Court explained that throughout the Court's history, judicial reluctance to expand statutory rights without explicit legislative guidance is "a recurring theme." 464 U.S. at 431; *see also Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 164–65 (1989). Thus, care should be taken to avoid extending statutory rights and privileges through judicial action. *Bauer*, 229 U.S. at 10.

Congress has provided no signal for an exception to the exhaustion doctrine for self-replicating technologies. This is true despite case law since the 1980s holding that sexually reproducing plants qualify for utility patent protection. *See Ex parte Hibberd*, No. 645-91, 227 U.S.P.Q. 443, 444–46 (B.P.A.I. Sept. 18, 1985). Twenty-five years of congressional silence is noteworthy. If Congress intended the exhaustion doctrine to include special exceptions for patented seeds, it could have signaled as much through legislation. *See Deepsouth*, 406 U.S. at 530; *cf. Sony*, 464 U.S. at 430 n.11 (observing that Congress enacted the Sound Recording Amendment of 1971 to address new copyright issues arising from the audio tape recorder).

When considered appropriate, Congress has passed laws creating exceptions to the first-sale doctrine. In 1990, Congress enacted the Visual Artists Rights Act, which allows an artist to retain an attribution right and prohibit an artwork's destruction regardless of who owns the work. 17 U.S.C. § 106A; *see also* H.R. Rep. No. 101-514 (1990), *reprinted in* 1990 U.S.C.C.A.N. 6915, 6924–25 (1990). Similarly, 17 U.S.C. § 109(b)(1)(A) provides exceptions to the first-sale doctrine for, among other things, computer programs, preventing commercialization by owners of particular copies by rental, lease, or lending.

Not only has Congress provided industry-focused exceptions to the first-sale doctrine for copyrights, it passed specific legislation providing protection for certain sexually reproducing plant varieties in the PVPA.[5] 7 U.S.C. § 2402(a)(1). In 1970, when Congress passed the PVPA, it was generally accepted that "[u]nder patent law, protection [was] limited to those varieties of plants which reproduce asexually . . . no [patent] protection [was] available to those varieties of plants which reproduce sexually . . . ." H.R. Rep. No. 91-1605 (1970), *reprinted in* 1970 U.S.C.C.A.N. 5082, 5082–83 (1970). To promote new seed development and balance the competing interests of private-industry plant breeders and farmers, Congress gave the breeders certain rights while reserving others for farmers and the public. *Id.*; *see also* 7 U.S.C. § 2402. Specific exceptions include a farmer's ability to save seeds descended from those purchased and use them for planting or for sale as provided in 7 U.S.C. § 2543. Congress included a research exception that allows the use and reproduction of protected seeds for breeding or for research. *See* 7 U.S.C. § 2544. In the PVPA, Congress also allowed the government to declare a protected variety open to public use for the purpose of ensuring an adequate food supply. *See* 7 U.S.C. § 2404.

By contrast, the Patent Act lacks any specific treatment for seeds. Unlike the PVPA, Congress passed the Patent Act against the backdrop of this Court's century-old exhaustion doctrine that provides purchasers with broad rights to use and resell patented products free of any infringement claims.

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5. Sexual reproduction is by seeds, whereas asexual reproduction does not use seeds but rather techniques such as grafting, budding, and layering.

Relying on cases interpreting the PVPA, Monsanto argued in its opposition to certiorari that this Court has *implicitly* held that an authorized sale of patented seeds does not exhaust patent rights in subsequent generations of seeds. *See* Br. in Opp. 14–15 (citing *Asgrow Seed Co. v. Winterboer*, 513 U.S. 179, 182 (1995), and *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 143 (2001)). Monsanto's arguments with respect to the PVPA conflict with this Court's teaching that patent rights should not be expanded "by overruling or modifying our prior cases construing the patent statutes, unless the argument for expansion of privilege is based on more than mere inference from ambiguous statutory language." *Deepsouth*, 406 U.S. at 531. The inferences Monsanto asks this Court to draw from the PVPA cannot be made absent clear congressional intent to modify the exhaustion doctrine in the context of the Patent Act.

Additionally, because Congress passed the PVPA when it was generally thought that sexually reproduced seeds were not protectable under the Patent Act, any attempt to read congressional intent about the exhaustion doctrine is inherently problematic. Given this Court's broad exhaustion doctrine, unlimited in the types of uses permitted following an authorized sale, no exceptions are required for seeds subject to authorized sales. For example, the PVPA's research exception is unnecessary for such seeds. *See* 7 U.S.C. §§ 2544–45.

Finally, the PVPA balances farmers' and private-industry's rights regarding progeny seeds. Congress considered various stakeholders' viewpoints in striking this balance. H.R. Rep. No. 91-1605, 1970 U.S.C.C.A.N. at 5084–85 (referring to hearings); *see, e.g.*, 116 Cong. Rec.

H11,332 (daily ed. Dec. 8, 1970). Congress has given no similar consideration to the progeny of seeds protected by utility patents. Any change to the exhaustion doctrine should come only after Congress has carefully considered issues concerning progeny seeds to determine the proper balance to strike between patentees, farmers, and the public, under the Patent Act. *See, e.g., Sony*, 464 U.S. at 431 (explaining that "Congress has the constitutional authority and the institutional ability to accommodate fully the varied permutations of competing interests that are inevitably implicated . . . .").

B. Contract Law Provides Adequate Remedies to Owners of Patents on Self-Replicating Technologies

Monsanto argues that "Bowman's exhaustion arguments would effectively eliminate the usefulness of patents in self-replicating technology." Br. in Opp. 14. But this argument ignores the validity of contract law as a means for exploiting inventions in such technologies, and it exaggerates the impact that a decision in Bowman's favor will have outside the seed industry. Most patented self-replicating technologies are not distributed as a commodity through third-party grain elevators the way seeds are often distributed. The only reason Monsanto lacks contractual privity with Bowman for the seeds he purchased from the grain elevator is because Monsanto *chooses* to distribute seeds in conventional channels of trade, thereby encouraging free mixing of its genetically modified crops with conventional crops. Dckt. #73-2 at 61. By encouraging that mixing, Monsanto achieves widespread adoption and substitution of its technology. Monsanto could legally require farmers who buy first-

generation Roundup Ready® seeds to sell progeny seeds only to grain elevators that agree to obtain promises from purchasers of the progeny seeds not to plant them. But this would require segregation and, by default, labeling of genetically modified grain at grain elevators.

If contract law is the exclusive means by which patentees can limit use, distribution, and resale of products embodying patented self-replicating technologies, the public will benefit greatly because this exposes the sale of such products to scrutiny under the antitrust laws. As this Court has acknowledged, "Antitrust laws . . . are the Magna Carta of free enterprise. They are as important to the preservation of economic freedom and our free-enterprise system as the Bill of Rights is to the protection of our fundamental personal freedoms." *United States v. Topco Assocs., Inc.*, 405 U.S. 596, 610 (1972). But "[t]he very object of [the patent] laws is monopoly . . . ." *Gen. Elec.*, 272 U.S. at 491. Therefore, with few exceptions, a contractual restriction that falls within the patent monopoly is immune from antitrust scrutiny. *See id.*

On the other hand, if a patentee's conduct "derives no support from the patent," restrictions on use and sale "must stand on the same footing under the Sherman Act as like stipulations with respect to unpatented commodities." *Univis*, 316 U.S. at 251. As *Univis* illustrates, a decision that exhaustion applies subjects an agreement regarding the exhausted goods to antitrust scrutiny. *See id.* at 251–54. Thus, while Monsanto could impose restrictions on purchasers under contract law, the public would be protected under antitrust law from unreasonably anticompetitive contractual terms. These considerations favor a decision that exhaustion applies to seeds sold in

authorized sales as well as seeds grown through lawful use of patented seeds.

Finally, a ruling in Bowman's favor would not "eviscerate the rights of the patent holder" as the Federal Circuit believes. PA14a. Commodity seeds are not substitutes for first-generation Roundup Ready® seeds. By mixing all harvests together in a grain elevator, seed identity is lost and uniformity of variety disappears. For these reasons alone, commodity seeds cannot be labeled and sold in direct competition with first-generation seeds. Ind. Code § 15-15-1-40(1) (2008) (discussing rules for labeling first-generation "certified" seed). Indeed, commodity seeds are not even directly competitive with progeny seeds grown from first-generation seeds and saved by a farmer in violation of an agreement with Monsanto. These are sometimes called "brown bag" seeds, and they consist of a single, uniform variety. Dckt. #98 at 7.

CONCLUSION

The Federal Circuit's decision provides Monsanto with an unprecedented level of protection. It permits Monsanto to sue farmers for patent infringement when they plant seeds that have been purchased on the open market in authorized and unrestricted sales. This decision conflicts with more than 150 years of law from this Court holding that patent rights terminate after an authorized sale. It also expands those rights by providing an exception to patent exhaustion for self-replicating technologies.

Absent congressional action, self-replicating technologies deserve no special consideration under the

exhaustion doctrine. The fact that products embodying these inventions will self-replicate by normal use should be of no consequence to an accused infringer's exhaustion defense. If Monsanto wants to restrict farmers' use of its self-replicating inventions, then it must do so under contract law. Under this Court's cases, Monsanto's patent rights terminated upon the authorized sale of seeds embodying the invention to Bowman, and it could no longer restrict his use of those seeds through patent law.

The judgment of the Federal Circuit should be reversed.

Respectfully submitted,

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APPENDIX

APPENDIX — RELEVANT STATUTES

35 U.S.C. § 154

§ 154. Contents and term of patent; provisional rights

(a) In general.

(1) Contents. Every patent shall contain a short title of the invention and a grant to the patentee, his heirs or assigns, of the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States, and, if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States, or importing into the United States, products made by that process, referring to the specification for the particulars thereof.

(2) Term. Subject to the payment of fees under this title, such grant shall be for a term beginning on the date on which the patent issues and ending 20 years from the date on which the application for the patent was filed in the United States or, if the application contains a specific reference to an earlier filed application or applications under section 120, 121, or 365(c) [35 U.S.C. § 120, 121, or 365(c)], from the date on which the earliest such application was filed.

(3) Priority. Priority under section 119, 365(a), or 365(b) [35 U.S.C. § 119, 365(a), or 365(b)] shall not be taken into account in determining the term of a patent.

(4) Specification and drawing. A copy of the specification and drawing shall be annexed to the patent and be a part of such patent.

(b) Adjustment of patent term.

(1) Patent term guarantees.

(A) Guarantee of prompt patent and trademark office responses. Subject to the limitations under paragraph (2), if the issue of an original patent is delayed due to the failure of the Patent and Trademark Office to--

(i) provide at least one of the notifications under section 132 [35 U.S.C. § 132] or a notice of allowance under section 151 [35 U.S.C. § 151] not later than 14 months after--

(I) the date on which an application was filed under section 111(a) [35 U.S.C. § 111(a)]; or

(II) the date on which an international application fulfilled the requirements of section 371 [35 U.S.C. § 371];

(ii) respond to a reply under section 132 [35 U.S.C. § 132], or to an appeal taken under section 134 [35 U.S.C. § 134], within 4 months after the date on which the reply was filed or the appeal was taken;

(iii) act on an application within 4 months after the date of a decision by the Board of Patent Appeals and Interferences under section 134 or 135 [35 U.S.C. § 134 or 135] or a decision by a Federal court under section 141, 145, or 146 [35 U.S.C. § 141, 143, or 146] in a case in which allowable claims remain in the application; or

(iv) issue a patent within 4 months after the date on which the issue fee was paid under section 151 [35 U.S.C. § 151] and all outstanding requirements were satisfied, the term of the patent shall be extended 1 day for each day after the end of the period specified in clause (i), (ii), (iii), or (iv), as the case may be, until the action described in such clause is taken.

(B) Guarantee of no more than 3-year application pendency. Subject to the limitations under paragraph (2), if the issue of an original patent is delayed due to the failure of the United States Patent and Trademark Office to issue a patent within 3 years after the actual filing date of the application in the United States, not including--

(i) any time consumed by continued examination of the application requested by the applicant under section 132(b);

(ii) any time consumed by a proceeding under section 135(a) [35 U.S.C. § 135(a)], any time consumed by the imposition of an order under section 181 [35 U.S.C. § 181], or any time consumed by appellate review by the Board of Patent Appeals and Interferences or by a Federal court; or

(iii) any delay in the processing of the application by the United States Patent and Trademark Office requested by the applicant except as permitted by paragraph (3)(C), the term of the patent shall be extended 1 day for each day after the end of that 3-year period until the patent is issued.

(C) Guarantee or adjustments for delays due to interferences, secrecy orders, and appeals. Subject to the limitations under paragraph (2), if the issue of an original patent is delayed due to--

(i) a proceeding under section 135(a) [35 U.S.C. § 135(a)];

(ii) the imposition of an order under section 181 [35 U.S.C. § 181]; or

(iii) appellate review by the Board of Patent Appeals and Interferences or by a Federal court in a case in which the patent was issued under a decision in the review reversing an adverse determination of patentability, the term of the patent shall be extended 1 day for each day of the pendency of the proceeding, order, or review, as the case may be.

(2) Limitations.

(A) In general. To the extent that periods of delay attributable to grounds specified in paragraph (1) overlap, the period of any adjustment granted under this subsection shall not exceed the actual number of days the issuance of the patent was delayed.

(B) Disclaimed term. No patent the term of which has been disclaimed beyond a specified date may be adjusted under this section beyond the expiration date specified in the disclaimer.

(C) Reduction of period of adjustment.

(i) The period of adjustment of the term of a patent under paragraph (1) shall be reduced by a period equal to the period of time during which the applicant failed to engage in reasonable efforts to conclude prosecution of the application.

(ii) With respect to adjustments to patent term made under the authority of paragraph (1)(B), an applicant shall be deemed to have failed to engage in reasonable efforts to conclude processing or examination of an application for the cumulative total of any periods of time in excess of 3 months that are taken to respond to a notice from the Office making any rejection, objection, argument, or other request, measuring such 3-month period from the date the notice was given or mailed to the applicant.

(iii) The Director shall prescribe regulations establishing the circumstances that constitute a failure of an applicant to engage in reasonable efforts to conclude processing or examination of an application.

(3) Procedures for patent term adjustment determination.

(A) The Director shall prescribe regulations establishing procedures for the application for and determination of patent term adjustments under this subsection.

(B) Under the procedures established under subparagraph (A), the Director shall--

(i) make a determination of the period of any patent term adjustment under this subsection, and shall transmit a notice of that determination with the written notice of allowance of the application under section 151 [35 U.S.C. § 151]; and

(ii) provide the applicant one opportunity to request reconsideration of any patent term adjustment determination made by the Director.

(C) The Director shall reinstate all or part of the cumulative period of time of an adjustment under paragraph (2)(C) if the applicant, prior to the issuance of the patent, makes a showing that, in spite of all due care, the applicant was unable to respond within the 3-month period, but in no case shall more than three additional months for each such response beyond the original 3-month period be reinstated.

(D) The Director shall proceed to grant the patent after completion of the Director's determination of a patent term adjustment under the procedures established under this subsection, notwithstanding any appeal taken by the applicant of such determination.

(4) Appeal of patent term adjustment determination.

(A) An applicant dissatisfied with a determination made by the Director under paragraph (3) shall have remedy by a civil action against the Director filed in the United States District Court for the Eastern District of Virginia within 180 days after the grant of the patent. Chapter 7 of title 5 [5 U.S.C. §§ 701 et seq.], shall apply

to such action. Any final judgment resulting in a change to the period of adjustment of the patent term shall be served on the Director, and the Director shall thereafter alter the term of the patent to reflect such change.

(B) The determination of a patent term adjustment under this subsection shall not be subject to appeal or challenge by a third party prior to the grant of the patent.

(c) Continuation.

(1) Determination. The term of a patent that is in force on or that results from an application filed before the date that is 6 months after the date of the enactment of the Uruguay Round Agreements Act shall be the greater of the 20-year term as provided in subsection (a), or 17 years from grant, subject to any terminal disclaimers.

(2) Remedies. The remedies of sections 283, 284, and 285 [35 U.S.C. §§ 283, 284, and 285] shall not apply to acts which--

(A) were commenced or for which substantial investment was made before the date that is 6 months after the date of the enactment of the Uruguay Round Agreements Act [enacted Dec. 8, 1994]; and

(B) became infringing by reason of paragraph (1).

(3) Remuneration. The acts referred to in paragraph (2) may be continued only upon the payment of an equitable remuneration to the patentee that is determined in an action brought under chapter 28 and chapter 29 (other than

those provisions excluded by paragraph (2)) [35 U.S.C. §§ 271 et seq. and 281 et seq.].

(d) Provisional rights.

(1) In general. In addition to other rights provided by this section, a patent shall include the right to obtain a reasonable royalty from any person who, during the period beginning on the date of publication of the application for such patent under section 122(b) [35 U.S.C. § 122(b)], or in the case of an international application filed under the treaty defined in section 351(a) [35 U.S.C. § 351(a)] designating the United States under Article 21(2)(a) of such treaty, the date of publication of the application, and ending on the date the patent is issued--

(A) (i) makes, uses, offers for sale, or sells in the United States the invention as claimed in the published patent application or imports such an invention into the United States; or

(ii) if the invention as claimed in the published patent application is a process, uses, offers for sale, or sells in the United States or imports into the United States products made by that process as claimed in the published patent application; and

(B) had actual notice of the published patent application and, in a case in which the right arising under this paragraph is based upon an international application designating the United States that is published in a language other than English, had a translation of the international application into the English language.

(2) Right based on substantially identical inventions. The right under paragraph (1) to obtain a reasonable royalty shall not be available under this subsection unless the invention as claimed in the patent is substantially identical to the invention as claimed in the published patent application.

(3) Time limitation on obtaining a reasonable royalty. The right under paragraph (1) to obtain a reasonable royalty shall be available only in an action brought not later than 6 years after the patent is issued. The right under paragraph (1) to obtain a reasonable royalty shall not be affected by the duration of the period described in paragraph (1).

(4) Requirements for international applications.

(A) Effective date. The right under paragraph (1) to obtain a reasonable royalty based upon the publication under the treaty defined in section 351(a) [35 U.S.C. § 351(a)] of an international application designating the United States shall commence on the date of publication under the treaty of the international application, or, if the publication under the treaty of the international application is in a language other than English, on the date on which the Patent and Trademark Office receives a translation of the publication in the English language.

(B) Copies. The Director may require the applicant to provide a copy of the international application and a translation thereof.

Appendix

35 U.S.C. § 271

§ 271. Infringement of patent

(a) Except as otherwise provided in this title [35 U.S.C. §§ 1 et seq.], whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.

(b) Whoever actively induces infringement of a patent shall be liable as an infringer.

(c) Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.

(d) No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following: (1) derived revenue from acts which if performed by another without his consent would constitute contributory infringement of the patent; (2) licensed or authorized another to perform acts which if performed without his consent would

constitute contributory infringement of the patent; (3) sought to enforce his patent rights against infringement or contributory infringement; (4) refused to license or use any rights to the patent; or (5) conditioned the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned.

(e)

(1) It shall not be an act of infringement to make, use, offer to sell, or sell within the United States or import into the United States a patented invention (other than a new animal drug or veterinary biological product (as those terms are used in the Federal Food, Drug, and Cosmetic Act and the Act of March 4, 1913) which is primarily manufactured using recombinant DNA, recombinant RNA, hybridoma technology, or other processes involving site specific genetic manipulation techniques) solely for uses reasonably related to the development and submission of information under a Federal law which regulates the manufacture, use, or sale of drugs or veterinary biological products.

(2) It shall be an act of infringement to submit--

(A) an application under section 505(j) of the Federal Food, Drug, and Cosmetic Act [21 U.S.C. § 355(j)] or described in section 505(b)(2) of such Act [21 U.S.C. § 355(b)(2)] for a drug claimed in a patent or the use of which is claimed in a patent,

(B) an application under section 512 of such Act [21 U.S.C. § 360b] or under the Act of March 4, 1913 (21 U.S.C. 151-158) for a drug or veterinary biological product which is not primarily manufactured using recombinant DNA, recombinant RNA, hybridoma technology, or other processes involving site specific genetic manipulation techniques and which is claimed in a patent or the use of which is claimed in a patent, or

(C) (i) with respect to a patent that is identified in the list of patents described in section 351(l)(3) of the Public Health Service Act [42 U.S.C. § 262(l)(3)] (including as provided under section 351(l)(7) of such Act [42 U.S.C. § 262(l)(7)]), an application seeking approval of a biological product, or

(ii) if the applicant for the application fails to provide the application and information required under section 351(l)(2)(A) of such Act [42 U.S.C. § 262(l)(2)(A)], an application seeking approval of a biological product for a patent that could be identified pursuant to section 351(l)(3)(A)(i) of such Act [42 U.S.C. § 262(l)(3)(A)(i)], if the purpose of such submission is to obtain approval under such Act to engage in the commercial manufacture, use, or sale of a drug, veterinary biological product, or biological product claimed in a patent or the use of which is claimed in a patent before the expiration of such patent.

(3) In any action for patent infringement brought under this section, no injunctive or other relief may be granted which would prohibit the making, using, offering to sell, or selling within the United States or importing

into the United States of a patented invention under paragraph (1).

(4) For an act of infringement described in paragraph (2)--

(A) the court shall order the effective date of any approval of the drug or veterinary biological product involved in the infringement to be a date which is not earlier than the date of the expiration of the patent which has been infringed,

(B) injunctive relief may be granted against an infringer to prevent the commercial manufacture, use, offer to sell, or sale within the United States or importation into the United States of an approved drug, veterinary biological product, or biological product,

(C) damages or other monetary relief may be awarded against an infringer only if there has been commercial manufacture, use, offer to sell, or sale within the United States or importation into the United States of an approved drug, veterinary biological product, or biological product, and

(D) the court shall order a permanent injunction prohibiting any infringement of the patent by the biological product involved in the infringement until a date which is not earlier than the date of the expiration of the patent that has been infringed under paragraph (2)(C), provided the patent is the subject of a final court decision,

as defined in section 351(k)(6) of the Public Health Service Act [42 U.S.C. § 262(k)(6)], in an action for infringement of the patent under section 351(l)(6) of such Act [42 U.S.C. § 262(l)(6)], and the biological product has not yet been approved because of section 351(k)(7) of such Act [42 U.S.C. § 262(k)(7)].

The remedies prescribed by subparagraphs (A), (B), (C), and (D) are the only remedies which may be granted by a court for an act of infringement described in paragraph (2), except that a court may award attorney fees under section 285 [35 U.S.C. § 285].

(5) Where a person has filed an application described in paragraph (2) that includes a certification under subsection (b)(2)(A)(iv) or (j)(2)(A)(vii)(IV) of section 505 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 355), and neither the owner of the patent that is the subject of the certification nor the holder of the approved application under subsection (b) of such section for the drug that is claimed by the patent or a use of which is claimed by the patent brought an action for infringement of such patent before the expiration of 45 days after the date on which the notice given under subsection (b)(3) or (j)(2)(B) of such section was received, the courts of the United States shall, to the extent consistent with the Constitution, have subject matter jurisdiction in any action brought by such person under section 2201 of title 28 for a declaratory judgment that such patent is invalid or not infringed.

(6) (A) Subparagraph (B) applies, in lieu of paragraph (4), in the case of a patent--

(i) that is identified, as applicable, in the list of patents described in section 351(l)(4) of the Public Health Service Act [42 U.S.C. § 262(l)(4)] or the lists of patents described in section 351(l)(5)(B) of such Act [42 U.S.C. § 262(l)(5)(B)] with respect to a biological product; and

(ii) for which an action for infringement of the patent with respect to the biological product--

(I) was brought after the expiration of the 30-day period described in subparagraph (A) or (B), as applicable, of section 351(l)(6) of such Act [42 U.S.C. § 262(l)(6)]; or

(II) was brought before the expiration of the 30-day period described in subclause (I), but which was dismissed without prejudice or was not prosecuted to judgment in good faith.

(B) In an action for infringement of a patent described in subparagraph (A), the sole and exclusive remedy that may be granted by a court, upon a finding that the making, using, offering to sell, selling, or importation into the United States of the biological product that is the subject of the action infringed the patent, shall be a reasonable royalty.

(C) The owner of a patent that should have been included in the list described in section 351(l)(3)(A) of the Public Health Service Act [42 U.S.C. § 262(l)(3)(A)], including as provided under section 351(l)(7) of such Act [42 U.S.C. § 262(l)(7)] for a biological product, but was not

timely included in such list, may not bring an action under this section for infringement of the patent with respect to the biological product.

(f)

(1) Whoever without authority supplies or causes to be supplied in or from the United States all or a substantial portion of the components of a patented invention, where such components are uncombined in whole or in part, in such manner as to actively induce the combination of such components outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.

(2) Whoever without authority supplies or causes to be supplied in or from the United States any component of a patented invention that is especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial noninfringing use, where such component is uncombined in whole or in part, knowing that such component is so made or adapted and intending that such component will be combined outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.

(g) Whoever without authority imports into the United States or offers to sell, sells, or uses within the United States a product which is made by a process patented in the United States shall be liable as an infringer, if the importation, offer to sell, sale, or use of the product occurs

during the term of such process patent. In an action for infringement of a process patent, no remedy may be granted for infringement on account of the noncommercial use or retail sale of a product unless there is no adequate remedy under this title for infringement on account of the importation or other use, offer to sell, or sale of that product. A product which is made by a patented process will, for purposes of this title, not be considered to be so made after--

(1) it is materially changed by subsequent processes; or

(2) it becomes a trivial and nonessential component of another product.

(h) As used in this section, the term "whoever" includes any State, any instrumentality of a State, and any officer or employee of a State or instrumentality of a State acting in his official capacity. Any State, and any such instrumentality, officer, or employee, shall be subject to the provisions of this title in the same manner and to the same extent as any nongovernmental entity.

(i) As used in this section, an "offer for sale" or an "offer to sell" by a person other than the patentee, or any designee of the patentee, is that in which the sale will occur before the expiration of the term of the patent.

RESPONDENT'S BRIEF

RECORD
AND
BRIEFS

No. 11-796

JAN 1 6 2013

IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, *et al.*,

Respondents.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

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QUESTIONS PRESENTED

1. Whether the first-sale doctrine grants the purchaser of a patented article the right to make, use, and sell an unlimited number of new copies of the patented invention that have never been sold.

2. Whether patent law treats as *per se* unenforceable all restrictions imposed by license on the use of a patented article following an authorized sale.

CORPORATE DISCLOSURE STATEMENT

Respondent Monsanto Company is a publicly held corporation; no publicly held company owns 10% or more of its stock. Respondent Monsanto Technology LLC is a wholly owned subsidiary of Monsanto Company.

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ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF FOR RESPONDENTS

STATEMENT

A. Monsanto's Biotechnology

This case concerns a revolutionary biotechnology that enables certain crops to tolerate glyphosate, the active ingredient in Roundup® and several other herbicides. Glyphosate is highly effective at eliminating most weeds and is valued for its environmental benefits, including its relative lack of toxicity and its ability to bind to soil and break down quickly. But glyphosate-based herbicides are non-selective, meaning that they also cause severe damage to conventional crop plants (*i.e.*, plants that have not been genetically modified to tolerate the herbicide). JA87a.

After investing hundreds of millions of dollars and more than a decade of research and development, Monsanto developed Roundup Ready® biotechnology, allowing farmers to use glyphosate to control weeds without harming their crops.[1] That technology, embodied in the DNA of Roundup Ready® crop seeds and the plants grown from them, immunizes plants from the herbicidal effects of glyphosate. It has proven extraordinarily popular. Monsanto first commercialized it for soybeans in 1996, and by 2007 it was being used in more than 90 percent of soybeans grown in the United States. JA87a-88a.

As reflected by farmers' overwhelming adoption, the technology offers soybean growers significant economic, safety, and environmental benefits. First, it has decreased production costs. A 2004 study estimated that the use of Roundup Ready® soybean seeds decreased labor costs by approximately $6.50 per acre and herbicide costs by $8.68 per acre. JA96a. Second, because glyphosate controls a broad spectrum of weeds,

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[1] Two Monsanto patents are at issue here. In relevant part, U.S. Patent No. RE39,247E (the '247 patent) describes novel DNA molecules that contain the genetic code for an enzyme that allows Roundup Ready® crops to withstand application of glyphosate. Monsanto asserted infringement of claims in the '247 patent directed to the DNA molecules themselves; glyphosate-tolerant plant cells, seeds, and plants that have been transformed with those DNA molecules; and a method of controlling weeds by planting the transformed seeds and then spraying glyphosate over the fields in which they were planted. U.S. Patent No. 5,352,605 (the '605 patent) describes the use of certain viral "promoter" DNA sequences for regulating the expression of man-made genes in plant cells. Monsanto asserted claims of the '605 patent directed to man-made genes containing the promoter present in Roundup Ready® soybeans and to plant cells containing that gene. *See* Pet. App. 3a-6a.

its use with soybean plants containing the patented technology has significantly reduced the management time needed to grow soybeans. Farmers need not engage in the laborious process of scouting weeds and matching particular herbicides to them, and they can use the saved time for other productive pursuits. JA94. Third, it has made weed control safer. Before the introduction of Roundup Ready® soybeans, growers often had to apply three or more different, higher-risk herbicides to achieve the same control that is achieved using glyphosate alone. JA91a, 95a. Fourth, the technology has had significant environmental benefits. Glyphosate is recognized as more environmentally friendly than other herbicides, and Roundup Ready® technology enables farmers to reduce or eliminate tillage of the soil, decreasing erosion and soil loss. JA93a. Finally, because the need for tilling is reduced or eliminated, Roundup Ready® technology has enabled more farmers to plant soybeans in narrower rows, increasing the number of soybean plants grown per acre. *See* Carpenter & Gianessi, *Herbicide tolerant soybeans: Why growers are adopting Roundup Ready varieties*, 2 AgBioForum 65, 65-72 (1999), http://agbioforum.org/v2n2/v2n2a02-carpenter.htm.

B. Monsanto's Licensing Program

Monsanto commercializes its invention by permitting sales of Roundup Ready® seeds to farmers who obtain a separate license (called a "Technology Agreement") defining their rights with respect to the patented technology embodied in those seeds.[2] JA37a-38a.

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[2] Monsanto licenses dozens of competing seed companies to incorporate Roundup Ready® technology into their own seed varieties and to market Roundup Ready® seeds under their own

The Technology Agreement authorizes farmers to use Roundup Ready® seeds to grow a "single commercial crop" that will also contain the patented gene technology. JA29a. A farmer is therefore authorized to sell the crop he grows from Roundup Ready® seeds for consumption through customary commercial channels—to an agricultural processor, for example, or to a grain elevator that in turn resells harvested crops to processors. In exchange for this limited right, Monsanto receives a royalty for each bag of Roundup Ready® seeds sold.

Under their license from Monsanto, farmers may not save seeds from harvested crops for planting on their own fields, nor may they sell saved seeds to others for planting.[3] JA29a. Nor does Monsanto license the planting of Roundup Ready® seeds obtained from an unauthorized seller or by anyone without a valid license agreement. A farmer who wishes to grow crops from Roundup Ready® seeds must obtain new seeds each planting season—which also enables the farmer to obtain the latest varieties from seed companies and benefit from warranties offered by the seed companies and Monsanto.

These restrictions on reproduction, use, and transfer are essential to protect the company's investment in its patented technology. Any grower with suitable land can reproduce genetically-identical soybeans at an exponential rate. Because the patented technology is in the DNA of Roundup Ready® seeds, soybeans grown

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brands. Monsanto also sells soybean seeds containing the technology, largely through its own subsidiary seed companies.

[3] Harvested soybeans can be used either as a commodity or as a seed, depending on whether they are processed for consumption or cleaned for planting.

from those seeds will also contain the genetic trait that allows them to tolerate glyphosate. JA37a-38a. And a single soybean seed can produce a plant containing as many as 80 soybeans, each of which can be harvested, cleaned, and planted to create new glyphosate-tolerant soybeans—virtually ad infinitum.[4] Were Monsanto unable to restrict this type of exponential reproduction, its ability to protect its patented technology would effectively be lost as soon as the first generation of the product was introduced into the market. JA102a-104a, 115a.

C. Petitioner's Conduct

Petitioner operates a farm in Indiana. From 1999 through 2007, petitioner planted Roundup Ready® soybean seeds, including soybeans purchased from Pioneer, a seed company that licenses the Roundup Ready® technology from Monsanto and incorporates the technology into its own proprietary soybean varieties. He executed a Technology Agreement, agreeing not to plant harvested Roundup Ready® soybeans.[5]

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[4] Actual yields vary. In 2007, USDA estimated that in Knox County, Indiana, where petitioner's farm is located, each acre of soybeans planted produced enough soybeans to plant 26 acres the following season. JA100a.

[5] In 2002, Petitioner executed a Pioneer Hi-Bred Technology Agreement, which identified Monsanto's '605 and '247 patents (then listed as No. 5,633,435). JA27a. Petitioner thereby agreed to "use the seed containing the subject technology for planting a commercial crop only in a single season ... and not to save any crop produced from this seed for replanting." *Id.* Petitioner has always maintained that he did not save any of the soybeans he grew from the Roundup Ready® seeds he legitimately acquired, and Monsanto did not allege patent infringement based on any of his activities relating to crops grown from that seed.

In May 1999, petitioner wrote Monsanto about where he "legally" stood regarding the Roundup Ready® seeds he had purchased from Pioneer. JA21a-22a. Petitioner informed Monsanto that he desired to save and plant the progeny soybeans he grew. *Id.* Monsanto explained that saving soybeans for planting was not permitted. JA158a-161a.

Petitioner then developed an idea that, he believed, would provide an inexpensive source of soybeans containing Monsanto's technology for planting. He concluded that he could purchase commodity soybeans from a grain elevator, plant those soybeans (most of which would contain the Roundup Ready® trait) to create a new crop, and never compensate Monsanto for use of the invention. Thus, although petitioner would not be planting seeds harvested from his own crop or seeds purchased directly from another farmer (which, he understood, would violate the terms of each farmer's Technology Agreement), he would be planting soybeans that other farmers had grown, harvested, and sold to the grain elevator as a commodity. He implemented his plan even though he understood it would be illegal for the grain elevator to sell him seeds for replanting. JA83a ("I knew that the elevator can't sell me seed beans. That's illegal.").[6]

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[6] Contrary to petitioner's suggestion (Br. 6), it is *not* customary for grain elevators to sell harvested soybeans to farmers for use as seed. Sales of soybean and other crop seeds are subject to extensive federal and state regulations that make grain elevators an unlikely source of crop seed. The Federal Seed Act and its Indiana counterpart impose on sellers of seeds detailed labeling and record-keeping requirements designed to ensure that farmers know what they are planting and that seeds can be tracked. *See* 7 U.S.C. §§ 1551-1611; Ind. Code §§ 15-15-1-32 to -43. Section 15-15-1-40 of the Indiana Code, for example, prohibits distribution of ag-

Beginning in 1999, petitioner purchased commodity soybeans from a grain elevator and used them to grow "second crop" soybeans—*i.e.*, soybeans planted and harvested after another crop. As petitioner hoped and expected, most of those soybeans carried the Roundup Ready® trait. *See* Pet. Br. 8 ("'[T]he commodity beans I bought turned out to be mostly R.R. beans as I had hoped.'"). Petitioner then took advantage of the soybeans' glyphosate tolerance by spraying his fields with glyphosate, thereby killing not only the weeds but also all of the soybean plants that did not contain Monsanto's patented biotechnology. JA75a-80a.

Petitioner sold most of his harvested crop to a grain elevator but saved some to plant the following year. JA25a, 75a, 79a. He repeated this practice for the next eight years, adding to his stock of saved seeds by making periodic additional purchases of commodity soybeans from the grain elevator and killing off all plants that lacked the patented biotechnology by spraying his fields. JA75a-80a.

D. Proceedings Below

In October 2007, after discovering petitioner's unauthorized cultivation of soybeans containing the Roundup Ready® trait, Monsanto sued petitioner to prevent further infringement of its patents and for damages arising from past infringement.[7] Petitioner

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ricultural seed within Indiana without a label informing purchasers about the variety being sold and maturity information. An elevator storing commingled soybeans could not provide such information.

[7] Various amici make (*see* Center for Food Safety (CFS) Br. 11-17; Public Patent Foundation Br. 2, 4) unsupported assertions about Monsanto's program of patent enforcement. To protect its investment, Monsanto has filed patent infringement actions

did not raise patent exhaustion in his answer or pursue any discovery on that theory. It was undisputed that petitioner's crops contained the Roundup Ready® trait and that petitioner had intentionally cultivated those crops and treated them with glyphosate. JA75a-80a, 83a-84a, 128a.

After Monsanto moved for summary judgment, the court ordered submissions regarding the patent exhaustion doctrine and *Quanta Computer, Inc.* v. *LG Electronics, Inc.*, 553 U.S. 617 (2008). Pet. App. 29a. It also invited submissions of additional evidence. *Id.* Both parties filed briefs. Other than his own affidavit, petitioner submitted no evidence on the exhaustion issue. For example, he did not attempt to show that the soybeans he purchased from the grain elevator were harvested from seeds purchased by other growers in authorized sales. JA189a-191a.

The district court concluded that the exhaustion doctrine was inapplicable because Monsanto had never authorized any sale of the soybeans petitioner harvested, or any unrestricted sale of soybeans containing its patented technology. Pet. App. 40a-41a. The court

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against intentional infringers. Monsanto has publicly committed not to assert its patent rights against persons who obtain its technology inadvertently. *See Monsanto's Commitment: Farmers and Patents* ("It has never been, nor will it be, Monsanto policy to exercise its patent rights where trace amounts of patented seed or traits are present in [a] farmer's fields as a result of inadvertent means."), http://www.monsanto.com/newsviews/Pages/commitment-farmers-patents.aspx (last visited Jan. 15, 2013). When Monsanto is forced to pursue a patent infringement suit to stop a farmer from intentionally infringing, it donates any damages awarded to youth leadership initiatives. *See Why Does Monsanto Sue Farmers Who Save Seeds*, http://www.monsanto.com/newsviews/Pages/why-does-monsanto-sue-farmers-who-save-seeds.aspx (last visited Jan. 15, 2013).

granted summary judgment to Monsanto and entered a final judgment. The court ruled that petitioner had infringed Monsanto's patents and awarded Monsanto compensatory damages of $84,456.30, plus costs and interest. Pet. App. 44a-45a, 46a-51a, 52a-53a.

On appeal, petitioner renewed his argument that Monsanto's patent rights in second- and subsequent-generation soybeans were exhausted, and that prior Federal Circuit decisions holding to the contrary were no longer valid after *Quanta*. The Federal Circuit rejected that contention and affirmed. In so ruling, the court examined two of its prior decisions, *Monsanto Co.* v. *McFarling*, 302 F.3d 1291 (Fed. Cir. 2002), and *Monsanto Co.* v. *Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006), which had rejected similar contentions. Each of those cases also involved farmers who replanted harvested second-generation soybeans without authorization from Monsanto, although in those cases the farmers had saved and replanted soybeans from their own harvests, not soybeans purchased from a grain elevator.

The Federal Circuit explained that its prior decisions had identified two distinct reasons why Monsanto retains patent rights in the biotechnology contained in soybeans harvested from Roundup Ready® soybean seeds (and soybeans grown from them). First, Monsanto never makes or permits an unconditional sale of soybeans containing its biotechnology; rather, it allows Roundup Ready® seeds to be sold for planting only through authorized channels and subject to a limited license that strictly defines the allowable uses of the soybean seeds and their progeny. Pet. App. 13a. Second, the court explained, "'[t]he first sale doctrine of patent exhaustion ... [wa]s not implicated, as the new seeds grown from the original batch had never been

sold.'" Pet. App. 13a (quoting *McFarling*, 302 F.3d at 1299 (punctuation altered)).

In this case, the court of appeals found the second rationale sufficient to reject petitioner's claim of patent exhaustion, without relying on the first rationale. The court explained that, even if Monsanto's patent rights in the soybeans petitioner purchased from the grain elevator had been exhausted through another farmer's sale of those soybeans to the elevator (a point the court did not decide), Monsanto nonetheless retained its patent rights in the crops petitioner grew from those soybeans, which had never been sold and which petitioner was never authorized to create: "[O]nce a grower, like Bowman, plants the commodity seeds containing Monsanto's Roundup Ready® technology and the next generation of seed develops, the grower has created a newly infringing article." Pet. App. 14a.

SUMMARY OF ARGUMENT

I. The first-sale doctrine does not apply to the *new* soybeans petitioner made, which were never the subject of any sale, much less a sale authorized by Monsanto.

A. Exhaustion is limited to the particular article sold and arises from the rationale that, through making a sale of an article embodying its invention, the patentee receives full reward for the use of its invention in that article. That rationale cannot apply to *other* articles, such as the new soybeans petitioner grew, that have never been sold. Monsanto's patent rights in those soybeans were thus not exhausted.

Petitioner argues (Br. 34) that all "subsequent generations" of soybeans produced from a common ancestor are "embodied" in the original soybean. But the

cases petitioner cites for support (*Quanta* and *Univis*) held only that if an incomplete article "substantially embodie[s]" the invention, then an exhausting sale grants the purchaser rights in "*the article sold*," *Quanta*, 553 U.S. at 638 (emphasis added); they do not suggest that exhaustion can grant a purchaser rights in an unlimited number of other, as-yet-uncreated articles.

Petitioner also argues that exhaustion applies because title to the new soybeans initially vested in him. This Court has never suggested that *initial possession* of title in a patented article is relevant, nor is it.

B. Additionally, the patent exhaustion doctrine never grants the purchaser the right to "make" new copies of the invention, as petitioner did when he cultivated new crops of soybeans embodying the invention. Although petitioner argues that growing crops does not constitute a "making," nothing in the Patent Act suggests Congress intended that term to have anything other than its ordinary meaning, which encompasses the production of new crops by farming.

Petitioner's contention (Br. 42) that "it was the planted soybean, not petitioner" that "made" new Roundup Ready® soybeans would eliminate protection for inventions produced through biological processes, an outcome that cannot be reconciled with this Court's prior decisions recognizing patent protection for such innovations. Moreover, petitioner fails to account for the substantial human effort required to create new generations of soybeans, including planting, fertilizing, applying herbicide to, and harvesting each crop.

Petitioner also contends that because cultivating soybeans constitutes "using" the planted soybeans as seeds, it cannot also be a "making" of new soybeans,

but there is no basis for reading these statutory rights as mutually exclusive in this way.

C. Petitioner's argument that the sale of a single soybean exhausts Monsanto's patent rights in all progeny would result in utility patent owners receiving *less* protection than is provided under the Plant Patent Act (PPA) or the Plant Variety Protection Act (PVPA). That result cannot be squared with Congress's intent or this Court's decisions that holders of utility patents receive *greater* protection than is provided under the PPA or PVPA.

D. Accepting petitioner's position would devastate innovation in biotechnology, which entails notoriously high research and development costs. Inventors are unlikely to make such investments if they cannot prevent purchasers of living organisms containing their invention from using them to produce unlimited copies.

II. In any event, Monsanto's patent rights also were not exhausted in the harvested soybeans petitioner purchased.

A. This Court has long held, and petitioner agrees, that patentees may license some rights while withholding others. Such a license limits not only a licensee's own rights, but also the rights the licensee can convey to third parties.

B. Petitioner argues that, even though a patentee can impose use, making, and sale restrictions on its licensees, a patentee cannot use patent law to enforce any of those conditions if the license is accompanied or followed by an authorized sale. But this Court held in *Mitchell* v. *Hawley* and *General Talking Pictures* that license restrictions are enforceable under patent law following a sale.

Like the licensees in those cases, farmers and independent seed companies make new patented articles under licenses that limit the use of those articles, even after a sale. Just as those licensees could not transfer—and their purchasers could not acquire—rights the licenses themselves did not give, farmers and independent seed companies could not have conveyed to downstream purchasers, like petitioner, rights expressly withheld in their licenses with Monsanto—including the right to grow new soybeans from harvested soybeans.

This Court has never adopted petitioner's *per se* rule against the enforcement of any license restriction following a sale. Instead, the Court has only applied the patent exhaustion doctrine to void restrictions that resulted in improper tying or price fixing.

C. Adopting the rule petitioner proposes would expand patent exhaustion into contexts ill-suited to its rationale, as this case illustrates. By authorizing use of its technology for a single growing season in exchange for a small royalty, Monsanto can incrementally recover its research and development investment through multiple transactions over many years, making use of the invention affordable. But if Monsanto could not limit reproduction of Roundup Ready® soybeans, commercialization of inventions embodied in seeds and plants would be well-nigh impossible. The only practical way to license the Roundup Ready® trait commercially is to convey it in soybean seeds to farmers and to allow those farmers to sell their crops containing that trait to consumers.

While petitioner attempts to defend his *per se* rule based on the "policy against restraints on the alienation of personal property" (Br. 44), patent rights always act as a restraint on the alienation of any personal proper-

ty. *See* 35 U.S.C. § 271(a). Moreover, petitioner's preferred alternative to patent protection—complex contractual arrangements—would, if effective, similarly restrain alienation, while imposing far greater transaction costs.

III. Contracts are a completely inadequate substitute for patent protection here. Monsanto could never enter into a contract with every entity that might misappropriate its technology. Lacking ubiquitous privity of contract, Monsanto could not be protected against or compensated for the full damage caused by a breach. Contract law would provide Monsanto with no ability to obtain injunctive relief against parties with whom it had no contract, such as those who purchased progeny soybeans from a breaching grower. It therefore could not enjoin them from making unlimited copies of the technology. Further, Monsanto could not recover from a breaching party all the damages caused by downstream growers who misappropriate the technology: Even if such damages were deemed non-speculative, no contracting party could afford to pay them. In any event, even to attempt to establish and monitor such a broad web of contracts would entail vast transaction costs that would ultimately be borne by authorized purchasers of the technology and their customers.

ARGUMENT

I. THE SALE OF A PATENTED ARTICLE DOES NOT GRANT THE PURCHASER RIGHTS TO MAKE, USE, OR SELL COPIES OF THAT ARTICLE

Petitioner contends that the patent exhaustion doctrine permits him to make, use, and sell an unlimited number of new copies of Monsanto's invention from the soybeans he purchased from the grain elevator. That contention fundamentally misapprehends the doctrine,

which applies only to the specific article sold, not to *new* articles embodying the patented invention. In addition, the patent exhaustion doctrine never authorizes a purchaser to "make" new copies of the invention. The exhaustion doctrine therefore cannot provide petitioner with the sweeping rights he claims.

The rule petitioner advances would undermine the patent system's purpose of encouraging innovation. If, as petitioner argues, the sale of a patented article conferred rights to make, use, or sell articles beyond the one actually sold, the inventor would find it impossible to maintain the exclusivity conferred by the patent laws the moment he commercialized the invention: Every sale would create a new potential competitor with rights to make, use, and sell new copies of the invention.

A. The First-Sale Doctrine Is Inapplicable To The Soybeans Petitioner Grew Because They Had Never Been Sold At The Time Of Infringement

The Federal Circuit correctly decided the only issue it reached: The new soybeans petitioner made were not subject to the first-sale doctrine because they had never been sold. Pet. App. 14a. That rationale is sufficient to dispose of this case and to affirm the judgment of the court of appeals.

1. Patent exhaustion, where it properly applies, allows the purchaser of an article embodying an invention to use and resell *that particular article*—but it does not confer the right to make, use, or sell the invention *generally*. This Court has never wavered from the principle that patent exhaustion applies only to the specific article that was sold in an authorized sale. *See, e.g.*, *Quanta Computer, Inc.* v. *LG Electronics, Inc.*, 553

U.S. 617, 625 (2008) ("[T]he initial authorized sale of a patented item terminates all patent rights *to that item*." (emphasis added)); *id.* at 626-628, 631-632, 636-637; *United States* v. *Univis Lens Co.*, 316 U.S. 241, 251 (1942) (the sale of an article exhausts "so far as [the invention] is or may be embodied *in that particular article*") (emphasis added); *United States* v. *General Electric Co.*, 272 U.S. 476, 489 (1926) (an exhausting sale deprives the patentee of control over what the purchaser does "with *the article* after his purchase" (emphasis added)); *Motion Picture Patents Co.* v. *Universal Film Mfg. Co.*, 243 U.S. 502, 516 (1917) ("*[T]he article sold* [is] thereby carried outside the monopoly of the patent law." (emphasis added)); *Adams* v. *Burke*, 84 U.S. (17 Wall.) 453, 455 (1873) (exhausting sale "carries with it the right to the use of *that machine*" (emphasis added)); *Bloomer* v. *Millinger*, 68 U.S. (1 Wall.) 340, 350 (1864) (patent exhaustion cuts off "any interest whatever *in the machine so sold*" (emphasis added)); *Wilson* v. *Rousseau*, 45 U.S. (4 How.) 646, 683 (1846) ("[T]he right to use the thing patented necessarily results in a right to use *the machine*, and nothing more." (emphasis added)).

More particularly, the purchaser of a patented article does not, by his purchase, obtain the right to make, use, or sell *new* articles embodying the patented invention. As the Court explained in *Mitchell* v. *Hawley*, 83 U.S. (16 Wall.) 544, 548 (1873), "the purchaser of the implement or machine for the purpose of using it in the ordinary pursuits of life ... does not acquire any right to construct another machine either for his own use or to be vended to another for any purpose." *See also Bloomer* v. *McQuewan*, 55 U.S. (14 How.) 539, 549 (1852) (noting this "plain" distinction). Thus, the purchaser of a patented article may "repair" it by replacing

worn or damaged parts, but the purchase confers no right to "reconstruct" the object so as to create a new copy of the invention. *See Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 365 U.S. 336, 342 (1961) (replacing convertible-top fabric was permissible repair with respect to claims directed to an automobile with a convertible top); *American Cotton-Tie Co.* v. *Simmons*, 106 U.S. 89, 93 (1882) (creating new cotton ties "by piecing together severed pieces of" old patented ties was impermissible reconstruction with respect to claims to novel cotton ties); *Wilbur-Ellis Co.* v. *Kuther*, 377 U.S. 422, 424 (1964) ("The idea of 'reconstruction' ... has the special connotation of those acts which would impinge on the patentee's right 'to exclude others from making' the article." (citation omitted)).

The principle that exhaustion extends only to the specific article sold follows directly from the rationale for the doctrine itself. When the authorized sale of an article embodying a patented invention exhausts the patentee's rights in that article, it is because the patentee has "in the act of sale received all the royalty or consideration which he claims for the use of his invention *in that particular machine or instrument*." *Adams*, 84 U.S. (17 Wall.) at 456; *see also Univis*, 316 U.S. at 251. But where the patentee has never "received his reward ... by the sale of the article," *Univis*, 316 U.S. at 251, the basis for exhaustion is lacking, and terminating patent rights in that article would "deprive a patentee of his just rights." *Keeler* v. *Standard Folding Bed Co.*, 157 U.S. 659, 666 (1895). Patent exhaustion therefore extends only to "'that quantity of the product of his invention'" that was actually sold, *id.* at 661, and no further.

2. As petitioner acknowledges, each soybean is a different article than the dozens of new soybeans a

grower can produce from it in the first season, the thousands in the second, the hundreds of thousands in the third, and so forth. *See* Br. 38 ("use" of planted seeds "result[s] in the creation of a new item" (emphasis omitted)). Each soybean with the Roundup Ready® trait contains the patented invention in identical form, but each is also a distinct article embodying that invention and is therefore independently subject to the patentee's rights.

The soybeans petitioner grew were never the subject of *any* sale, let alone an exhausting one. Those articles did not even exist until petitioner's activities brought them into being. Because the soybeans petitioner grew himself had never been sold by anyone, Monsanto's patent rights in the inventions contained in those soybeans could not have been exhausted.

This Court addressed a similar issue in *Microsoft Corp.* v. *AT&T Corp.*, 550 U.S. 437, 452-453 (2007), and concluded that identical copies of software must be treated as separate components from the master disk used to make them, even though the only use of the master disk was to create such copies. That logic also applies to soybeans, as this Court observed in likening making copies of software to making copies of biological material through reproduction. *Id.* at 453-454 ("Copying software abroad, all might agree, is indeed easy and inexpensive. But the same could be said of other items: ... 'chemical or biological substances might be created by reproduction[.]").

Petitioner raises two arguments why the exhausting sale of one soybean should be deemed to exhaust patent rights in all future descendant soybeans. Both lack merit.

First, petitioner argues (Br. 34, 37) that all "[s]ubsequent [g]enerations" of soybeans produced from a common ancestor are "'[e]mbodied'" or "'substantially embod[ied]'" in the original soybean. Therefore, petitioner contends, the sale of even a single Roundup Ready® soybean exhausts Monsanto's rights with respect to *every* soybean that may ever be produced from that original.

Accepting this argument would require an unprecedented expansion of the exhaustion doctrine. This Court has never suggested that the sale of a single article could exhaust patent rights as to some indefinite quantity of articles *other* than the one actually sold, so long as the original article "embodies" the others. Nor has this Court ever suggested that exhaustion can apply to future articles that have not come into existence in any form, let alone been sold in an authorized sale.

Petitioner purports (Br. 34-35) to model his reasoning on *Quanta* and *Univis*, but his argument bears no resemblance to the Court's analysis in those cases. In both *Quanta* and *Univis*, the exhaustion analysis turned in significant part on whether an *incomplete* article "substantially embodied" the patented invention, such that an authorized, unrestricted sale of the incomplete article would exhaust any patent rights "'*with respect to the article sold.*'" *Quanta*, 553 U.S. at 631, 638 (emphasis added). Petitioner, by contrast, contends (Br. 34-35) that the article sold substantially embodies all *subsequent generations* of future articles, such that the patentee's rights are exhausted with respect to those future articles.[8] Neither *Quanta* nor *Univis* sug-

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[8] Petitioner has expressly disclaimed any argument that the soybeans are "incomplete" in the sense described by *Quanta* and *Univis*. Br. 36 ("The seeds are not 'incomplete' or 'unfinished' arti-

gests that the relevant question is whether the article sold embodies other, as-yet-uncreated articles that contain the patented invention; rather, those cases concern the antecedent question of whether the *invention* was embodied in the particular article that was sold.

Second, petitioner argues (Br. 43-44) that exhaustion applies to the soybeans he grew because "[f]armers such as Bowman who choose to plant commodity grain for their second crop lawfully own the next-generation [soybeans]." But as this Court stated without qualification in *Quanta*, "[e]xhaustion is triggered *only* by a *sale* authorized by the patent holder." 553 U.S. at 636 (emphasis added). The initial vesting of ownership rights in the producer of a patented article is neither a sale nor any other *transfer* of title from the patentee or its licensee, and therefore cannot trigger exhaustion.[9]

Although some of this Court's early exhaustion decisions refer to the *transfer* of title in an authorized sale,[10] the Court has never suggested that the *initial possession* of title in an article is relevant. Nor could it be. Whenever an infringer creates a new copy of an invention without authorization, he is likely to hold title to the object he has fashioned. For example, a company

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cles that merely embody 'essential features' of the claimed inventions.").

[9] Petitioner's notion (Br. 43-44) that Monsanto "permitt[ed] title in progeny seeds to vest in farmers" and therefore "permitted exhaustion to apply to those seeds" is misplaced, because Monsanto has no right to exclude any person from "possessing" or "holding title" to those soybeans. Monsanto's patents instead give it the right to exclude others from making, using, or selling its patented invention. 35 U.S.C. § 154(a).

[10] *See, e.g.*, *Bauer & Cie* v. *O'Donnell*, 229 U.S. 1, 17 (1913); *Mitchell*, 83 U.S. at 548.

that manufactures a cellphone without authorization from a patentee with rights covering it will likely have title to the resulting product—but the manufacturer will nonetheless infringe the patent by making and selling the phone. Similarly, unauthorized reconstruction of a patented article constitutes infringement, even when the infringer owns the object. *See, e.g.*, *Aro*, 365 U.S. at 346; *American Cotton-Tie*, 106 U.S. at 93. And unauthorized assembly of component parts into a new patented article can infringe a combination patent, even if the assembler owns all the component parts. *See, e.g.*, *Ives* v. *Hamilton*, 92 U.S. 426, 431 (1876). Making exhaustion coextensive with the initial possession of title would seriously undermine patent protection, because it would allow anyone to make a patented article from staple goods without regard for the patentee's rights.[11]

B. Patent Exhaustion Does Not Apply To Soybeans Made Without Monsanto's Authorization

1. The Patent Act grants the holder of a valid patent "the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States." 35 U.S.C. § 154(a)(1). The rights to make, use, and sell "are each substantive rights, and may be granted or conferred separately by the patentee." *Adams*, 84 U.S. (17 Wall.) at 456. Engaging in any of these activities without the authorization of the patentee is infringement. 35 U.S.C. § 271(a).

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[11] Likewise, a manufacturer licensed by a patentee has title in the patented articles he produces, but exhaustion does not apply to those articles until they are sold in an authorized sale. *See General Electric*, 272 U.S. at 489-490; *Quanta*, 553 U.S. at 636.

As petitioner concedes, this Court's decisions establish that the patent exhaustion doctrine has no relevance to the "mak[ing]" of a patented invention. *See* Br. 37 ("It is well settled that the exhaustion doctrine does not extend to the right to 'make' a new product."). Even where an exhausting sale provides the purchaser of a patented article the right to use and resell it without restriction, the purchaser acquires no right to "make" new copies of the invention.

That principle is dispositive of this case. Petitioner's planting and cultivation of soybeans containing the Roundup Ready® trait was an infringing act because he thereby "ma[de]" new articles embodying Monsanto's invention without its authorization, in contravention of Monsanto's exclusive right to control the "making" of its invention. 35 U.S.C. §§ 154(a)(1), 271(a).[12]

2. Petitioner attempts to avoid that straightforward conclusion by arguing (Br. 37-42) that growing crops containing patented traits does not constitute "making" within the meaning of § 271(a). Those arguments lack merit.

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[12] There is no merit to petitioner's assertion (Br. 10) that "there was no evidence before the district court that could have supported a judgment based on the number of infringing units allegedly 'made.'" Monsanto's damages calculations were based on a reasonable royalty derived from the increased profits petitioner could realize from the new soybeans he grew. JA101a-116a (in the hypothetical negotiation of a reasonable royalty Monsanto would "insist on no less than 75% of the net income from the infringing soybeans"). To calculate the number of soybeans grown, Monsanto's expert understandably utilized yield estimates based on the number of acres Bowman planted (*e.g.*, JA100a, 103a & n.1), as actually counting the soybeans Bowman had produced was impossible.

Petitioner concedes (Br. 7-8) that he cultivated nine seasons' worth of soybeans containing Monsanto's patented Roundup Ready® trait by planting either soybeans he purchased from the grain elevator or soybeans he had grown from grain elevator soybeans, which he had saved from previous harvests. Each year, petitioner had to plant the soybeans he saved or purchased from the elevator in suitable soil, at the correct depth, and in the correct manner, at a time suitable for planting, and fertilize them, *see* C.A. App. A0329-0332, A0351; National Soybean Research Laboratory, *Soybean Production Basics*, http://www.nsrl.illinois.edu/general/soyprod.html (last visited Jan. 15, 2013); he applied glyphosate to kill weeds (as well as any soybean plants not possessing the Roundup Ready® trait); and he had to harvest the resulting crop. *See, e.g.*, JA75a, 79a. The soybeans petitioner cultivated did not spontaneously grow themselves: their reproduction required substantial, and sustained, human effort.

a. Petitioner suggests (Br. 37-38), however, that when he cultivated soybeans containing the Roundup Ready® trait, there was no "making" within the meaning of §§ 154(a)(i) and 271(a). There is no support for that contention in the language of the statute, this Court's decisions, or Congress's objectives in enacting the Patent Act.

Nothing in the Patent Act suggests that the words "making" and "makes" in §§ 154(a) and 271(a) have anything other than their ordinary, common meanings. The ordinary meaning of "making" encompasses the creation or production of new articles—including the production of new soybeans through the act of farming. *See, e.g.*, *Webster's Third New International Dictionary* 1363 (3d ed. 2002) (one meaning of "make" is "to plant and raise (a crop)"); *Texas & Pac. Ry. Co.* v. *Bayliss*, 62

Tex. 570, 574 (1884) ("The meaning of the word *make*, when used in relation to a crop, is as well understood as any other word in our language. It means 'produce at maturity.'"); *cf. Random House Dictionary of the English Language* 1161 (2d ed. 1987) (defining "make" as "to produce"); 6 *Oxford English Dictionary* 73 (1933) (defining "making" to include "production").

As this Court explained when interpreting the terms "manufacture" and "composition of matter," "Congress plainly contemplated that the patent laws would be given wide scope." *Diamond* v. *Chakrabarty*, 447 U.S. 303, 308 (1980). If the term "make" is to be applied meaningfully to protect inventions as diverse as chemical compounds, mechanical devices, microchips, computer software, and living organisms not found in nature—which are made in drastically different ways—it must be given similarly broad scope.

Congress and the courts have repeatedly expressed the understanding that cultivating crops is a "making." In *Barlow* v. *Collins*, for example, this Court considered an agency's interpretation of a statute permitting assignment of certain government payments "'as security for cash or advances to finance *making a crop*.'" 397 U.S. 159, 160 (1970) (quoting Agricultural Adjustment Act of 1938, 52 Stat. 31, 35). The agency defined the clause "[t]o finance *making* a crop" as meaning "to finance the *planting, cultivating, or harvesting* of a crop," among other things. *Id.* at 162 n.3 (quoting 32 Fed. Reg. 14,921 (1967) (emphasis added)). The Controlled Substances Act defines the term "manufacture"—a term even narrower than "making"—to include "production," which is defined to include "planting, cultivation, growing, or harvesting." 21 U.S.C. § 802(15), (22). And Congress has consistently referred to farmers as "producers" of crops. *Cf.* 7 U.S.C.

§ 7951(8) ("'[P]roducer' means an owner, operator, landlord, tenant, or sharecropper that shares in the risk of producing a crop on a farm."); *id.* § 7333(e)(4)(A)(ii) (referring to "a producer who produces a crop on a farm"). Many lower courts have also referred to farming as the act of "making crops." *See, e.g.*, *Cummer-Graham Co.* v. *Straight Side Basket Corp.*, 142 F.2d 646, 647 (5th Cir. 1944) (referring to license "to use the patented harrow in *making* crops" (emphasis added)); *Roque Gonzalez & Cia.* v. *Torres*, 51 F.2d 237, 238 (1st Cir. 1931) ("These firms agreed to make advancements for use in *making*, harvesting, and storing his 1929 crop." (emphasis added)).[13]

Petitioner concedes (Pet. 20) that a "making" occurs when what he calls "seed producers" (*i.e.*, Monsanto-licensed seed variety developers like Pioneer) "manufacture[]" Roundup Ready® seeds for sale to growers across the nation. But petitioner's cultivation activities are no different, except in scale. Like petitioner, "seed producers" engage in the steps of planting, fertilizing, applying herbicide, and harvesting.[14] McDonald &

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[13] Petitioner argues (Br. 39) that the United States' definition of "make" as "to bring about" or "to cause to exist" is "overly broad" because it would eliminate the distinction between direct and indirect infringement. This Court need not determine the outer limits of the term "make," however, because producing new crops embodying a patented invention falls well within those limits. *See also* U.S. Br. 27-28 (explaining why petitioner's argument lacks merit).

[14] Contrary to petitioner's assertion (Pet. 20), "seed producers" do not "artificially insert patented germplasm into naturally occurring soybeans seeds" in order to make Roundup Ready® seeds; doing so would require separate USDA approval each time, *see* 7 U.S.C. § 7711(c)(2); 7 C.F.R. § 340.6; *see also Monsanto Co.* v. *Geertson Seed Farms*, 130 S. Ct. 2743, 2749-2750 (2010). Instead, "seed producers" crossbreed their varieties with the progeny of a

Copeland, *Seed Production: Principles and Practices* 29-36 (2012). In both cases, the desired result is the same: the production of many new Roundup Ready® soybeans.

b. Petitioner also suggests (Br. 42) that nature, rather than petitioner, was the relevant actor under § 271(a): "[I]t was the planted soybean, not [petitioner], that 'physically connected' all elements of the claimed invention into an 'operable whole.'" Petitioner cites no authority for the proposition that growing new soybeans should be attributed to the agency of the *seeds*, rather than the farmer. Such a rule could have wide-ranging adverse consequences for patent rights: much modern technology involves assembly of elements into an "operable whole" through "physical connection" not directly performed by human actors. The circuitry in microchips is arranged by a computer and constructed by computerized photolithography and etching equipment. Copies of computer software are made entirely by a machine based on an instruction that may not even come directly from a human. These acts of "making" require far less direct human intervention than growing a crop.

Petitioner's position amounts to a rule that the Patent Act provides no protection for the making of inventions produced through biological processes. Under petitioner's rule, it is the organism that performs the "making" of such products, yet one could hardly hold a soybean or bacterium liable for patent infringement. More fundamentally, that argument cannot be recon-

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particular soybean line transformed by Monsanto and approved by the USDA. *See* Determination of Nonregulated Status of Monsanto Co., Genetically Engineered Soybean Line, 59 Fed. Reg. 26,781 (May 24, 1994).

ciled with this Court's recognition of patent protection for living organisms generated through human intervention. *See Chakrabarty*, 447 U.S. 303. The Court there explained that patent protection applies to "anything under the sun that has been made by man," *id.* at 309 (quoting S. Rep. No. 82-1979, at 5 (1952)), with no suggestion that human activity must be the sole means of creating each embodiment of the invention, to the exclusion of all other forces (biological, chemical, or mechanical).[15]

c. Petitioner further contends (Br. 37-38) that the activity of cultivating soybeans does not constitute "making" new soybeans but rather constitutes "using" the planted soybeans as seeds. But petitioner points to nothing to suggest that an act of "using" cannot *also* be an act of "making." Courts customarily do not read two statutory prohibitions as mutually exclusive, such that a violation of one provision cannot constitute a violation of the other.[16] Nothing in the text of the Patent Act

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[15] The understanding that unauthorized cultivation of crops containing a protected trait constitutes infringement is also reflected in the Plant Variety Protection Act. The PVPA grants breeders the right to exclude others from "reproducing" protected plant varieties by planting harvested seeds and makes growers liable for unauthorized reproduction if they engage in that activity. 7 U.S.C. §§ 2483(a)(1), 2541(a). Congress believed that unauthorized cultivation would be the primary way that rights in plant varieties would be infringed: "[I]nfringement is expected almost never to be by independent work, but by willful reproduction starting from the protected variety itself." H.R. Rep. No. 91-1605, at 11 (1970).

[16] *See, e.g.*, *United States* v. *Wright*, 742 F.2d 1215, 1219 (9th Cir. 1984) ("However, the cultivation and possession provisions are not mutually exclusive but overlapping. It is quite possible to possess with intent to distribute the marijuana that is being cultivated."); *Ferrell* v. *United States*, 963 F. Supp. 615, 621 (E.D. Mich.

suggests that Congress deviated from that principle here.

Indeed, this Court's decisions make clear that petitioner cannot "use" his existing soybeans to violate Monsanto's rights by "making" new articles without Monsanto's authorization. In *American Cotton-Tie*, patented cotton ties that were made and sold by the patentee were later acquired by the defendant after they were used by others. 106 U.S. at 91. There was no question that the used ties were the unrestricted personal property of the defendants, who were generally free to use or dispose of them as they wished. This Court nonetheless held that "[w]hatever right the defendants could acquire to the *use* of the old buckle," the defendant could not "*use*" it by reassembling it to make new ties embodying the plaintiff's patented design. *Id.* at 91, 93-94 (emphasis added). Similarly, whatever right petitioner acquired to "use" the seeds he purchased from the grain elevator, he could not "use" them to make new copies of Monsanto's patented invention.

C. Petitioner's Argument Is Inconsistent With Congress's Statutory Scheme And This Court's Precedent On Patent Protection For Innovations Embodied In Plants

Petitioner's argument that the sale of a single soybean exhausts Monsanto's patent rights in all progeny would result in utility patent owners receiving *less* protection than is provided under the Plant Patent Act of 1930, 35 U.S.C. §§ 161-164, or the Plant Variety Protection Act, 7 U.S.C. §§ 2321 *et seq.* Contrary to petition-

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1997) ("[J]ust because the Defendant's conduct may constitute 'carrying' under the statute does not mean that conduct may not also be a 'use' within the definition of the statute.").

er's argument (Br. 54), that result cannot be squared with Congress's intent or this Court's decisions, which hold that holders of utility patents receive *greater* protection than is provided under the PPA or PVPA.

A PPA patent grants only the right to exclude others from "asexually reproduc[ing] a protected plant," and can be obtained by satisfying a more "relaxed" description requirement than that applicable to utility patents. *See J.E.M. Ag Supply, Inc.* v. *Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 133 (2001). As this Court has noted, "[p]lant patents under the PPA ... have very limited coverage and less stringent requirements than [35 U.S.C.] § 101 utility patents." *Id.*

The PVPA protects rights in "sexually reproduced ... plant variet[ies]," including the right to exclude others from "sexually multiply[ing], or propagat[ing]" the variety. 7 U.S.C. §§ 2402(a), 2541(a)(3). As with the PPA, the requirements for obtaining a plant variety protection (PVP) certificate are less stringent, and the protection provided to the patentee is less extensive, than with a utility patent. *See J.E.M.*, 543 U.S. at 142.

By contrast, a utility patent protects "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof," 35 U.S.C. § 101, including inventions embodied in sexually and asexually reproduced plants. A patent is available, however, only if the patentee can satisfy the demanding standards of usefulness, novelty, nonobviousness, enablement, written description, and the other requirements set forth in 35 U.S.C. §§ 101-123. "Because of the more stringent requirements, utility patent holders receive greater rights of exclusion than holders of a PVP certificate" or a plant patent under the PPA. *J.E.M.*, 534 U.S. at 133, 143.

Petitioner's argument would turn this statutory scheme on its head, denying utility patent holders the most important right available under the PVPA and PPA—the right to control reproduction of the invention in new plants. Under the PPA, breeders can prevent purchasers from asexually reproducing a patented plant even after an authorized sale. *See J.E.M.*, 534 U.S. at 136 (noting that statute's purpose was to protect covered plants from being "regularly copied, draining profits from those who discovered or bred new varieties"). Similarly, under the PVPA, breeders can restrict buyers from sexually reproducing the plant "as a step in marketing (for growing purposes) the variety," 7 U.S.C. § 2541(a)(3), and from selling progeny seed for replanting beyond the amount needed to replant the farmer's own acreage, *see Asgrow Seed Co.* v. *Winterboer*, 513 U.S. 179, 190-191 (1995).

Were petitioner's argument accepted, a utility patent owner would have *none* of these rights: The patentee could not prevent a buyer from reproducing plants containing the invention or selling the resulting copies of the invention for *any* purpose. Moreover, all authorized purchasers would obtain a broad right to save seeds or use them for research without the patentee's authorization, in direct contradiction to this Court's prior determination that "[t]he utility patent statute does not contain ... exemptions" for saving seed and research. *J.E.M.*, 534 U.S. at 140. Petitioner can point to nothing that would justify this complete reversal of the relationship between utility patents and the protections provided by the PPA and PVPA.

D. The Court Should Not Create An Exception Disfavoring Innovations In Biotechnology

Petitioner argues (Br. 51) that the Court should not create an "exception" to patent exhaustion for genetically modified seeds, but in fact it is petitioner who seeks to create an exception for biotechnology and other inventions that can be identically (and in some cases massively and quickly) reproduced. Petitioner would presumably accept, for example, that the purchaser of an industrial machine does not thereby obtain the right to create a new, identical copy of that machine out of steel, copper, or other raw materials. Yet he nonetheless argues that the purchaser of a biotechnological invention, such as an improved seed, does obtain the right to use that invention to produce an unlimited number of additional copies of the seed. Under petitioner's view, the fact that an invention can be used to create more units of that invention renders normal exhaustion principles inapplicable. But petitioner offers no support for the position that normal exhaustion principles are inapplicable merely because an invention is "made" in one particular way.

Adopting petitioner's position would be particularly devastating to innovation in biotechnology. Although patents would theoretically remain available for inventions embodied in living organisms under this Court's decision in *Chakrabarty*, there would be little incentive for inventors to undertake the expensive and time-consuming research necessary to develop patentable inventions, as they would receive essentially no protection against the copying of any commercialized invention embodied in living organisms. Other inventions and technologies with similar characteristics would also be at risk: a software product that is replicated by a machine, a 3-D printer that can be used to

print components for more 3-D printers,[17] or a synthetic molecule that can be used to produce copies of itself.[18] *See* U.S. Br. 18. Under such a regime, innovators in biotechnology and similar fields would find it far more difficult, if not impossible, to recoup their investments in research and development.

Petitioner's rule would be particularly damaging because research and development costs for cutting-edge work in biotechnology are notoriously high. *See* FTC, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy*, ch. 3, at 16 (Oct. 2003) (The research and development process "is particularly lengthy for biotechnology firms, because biotechnology innovation is more uncertain than innovation in other industries."). Biotechnology research and development expenditures are more than double the average of the pharmaceutical industry, which itself is several times more intensive than any other industry. *Id.* at 15-16. For every successful biopharmaceutical, for example, there are approximately 10,000 failed attempts. DiMasi & Grabowski, *The Cost of Biopharmaceutical R&D: Is Biotech Different?*, *Managerial & Decision Economics* 473 (2007). It costs even more to bring useful inventions to market. The average time to commercialize an agricultural trait is 13.1 years, at a

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[17] *See* RepRap, http://reprap.org/wiki/Main_Page ("Since many parts of RepRap are made from plastic and RepRap prints those parts, RepRap self-replicates by making a kit of itself—a kit that anyone can assemble given time and materials.") (last visited Jan. 15, 2013).

[18] *See* Emspak, *Scientists Build Self-Replicating Molecule*, DiscoveryNews, Oct. 14, 2011, http://news.discovery.com/tech/scientists-buil-self-replicating-molecule-111014.html.

cost of $136 million.[19] Thus, it is particularly important in this area that innovators have sufficient incentive to invent. The rule petitioner seeks would jeopardize the fundamental purpose of the patent system.

II. A PATENTEE MAY CONVEY LIMITED RIGHTS TO LICENSEES AND PURCHASERS

As explained above (and as the Federal Circuit correctly held, *see* Pet. App. 14a), this case should be resolved on the ground that Monsanto's rights in the soybeans petitioner grew were not exhausted: Those soybeans had never been sold, and patent exhaustion does not authorize making new articles. As the United States agrees (Br. 32), the Court therefore need not reach any of petitioner's contentions that Monsanto's rights in *prior* generations of soybeans were exhausted, either because Monsanto authorized farmers to sell harvested soybeans to grain elevators as commodities, or because farmers purchased soybean seeds from seed dealers in authorized sales.[20]

Should the Court deem such a determination necessary, however, it should conclude that Monsanto's pa-

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[19] *See* CropLife International, *Study: Cost of Bringing a Biotech Crop to Market*, http://www.croplife.org/PhillipsMcDougall Study (last visited Jan. 15, 2013).

[20] Nor is analysis of Monsanto's patent rights in the grain elevator soybeans possible on the record petitioner developed. As petitioner recognizes (*e.g.*, Br. 9), exhaustion is an affirmative defense, which means he bears the burden of proof, *see Fuji Photo Film Co.* v. *ITC*, 474 F.3d 1281, 1293-1294 (Fed. Cir. 2007). But petitioner offered no evidence about whether the soybeans he obtained from the grain elevator had previously been sold in a sale Monsanto authorized. Response to Request for Admission, No. 1, Dkt. No. 41 (S.D. Ind.) (conceding that he "do[es] not know the origin of the[] [soy]beans"); *see also* JA83a, 163a, 167a.

tent rights in the prior generations of seeds were not exhausted and affirm the judgment on that alternative basis. Monsanto issued a limited license in its technology to farmers who acquired Roundup Ready® seeds in authorized sales. That license withheld any right to plant harvested soybeans, and the price of that license reflected its limited scope. This Court's decisions make clear that a patentee may limit its licensees' rights to use its invention, and that those restrictions are not *per se* unenforceable merely because the licensee subsequently sells an article embodying that invention to a third party. *See Mitchell*, 83 U.S. (16 Wall.) at 548; *General Talking Pictures Corp.* v. *Western Electric Co.*, 304 U.S. 175, 181 (1938). Accordingly, petitioner never acquired the right to use the soybeans he purchased from the grain elevator to grow a new crop and he infringed when he did so.

A. A Patentee May License Limited Rights To Make, Use, And Sell The Patented Invention

The fundamental difficulty with petitioner's argument is that it fails to address Monsanto's license arrangements with farmers and seed companies. All farmers who purchase Roundup Ready® seeds in an authorized sale have separately entered into a "Technology Agreement" license to limited rights. Specifically, that Agreement authorizes the use of Roundup Ready® technology solely for growing one commercial crop of soybeans. Monsanto has never licensed any farmer to make multiple seasons' use of its Roundup Ready® technology by planting harvested soybeans. Instead, the Monsanto Technology Agreement expressly states that it does not authorize farmers to "save any crop produced from the seed for replanting, or supply saved seed to anyone for replanting"—the very rights

at issue in this case. JA40a; *see also* JA29a, 126a-127a. For these license rights, Monsanto receives a royalty that is trivial in comparison to the value of using Roundup Ready® technology in nearly unlimited quantities of soybean seeds for the life of its patents.[21]

This Court has long held that patent rights are divisible and that patent owners may license some rights while withholding others. *See Adams*, 84 U.S. (17 Wall.) at 456. Seventy years ago, "[t]he practice of granting licenses for a restricted use" was already "an old one." *General Talking Pictures Corp.* v. *Western Electric Co.*, 305 U.S. 124, 127 (1938). Then, as now, the legality of that practice "has never been questioned." *Id.*; *see also General Electric*, 272 U.S. at 490; *E. Bement & Sons* v. *National Harrow Co.*, 186 U.S. 70, 91 (1902); *Mitchell*, 83 U.S. (16 Wall.) at 548; *Rubber Co.* v. *Goodyear*, 76 U.S. (9 Wall.) 788, 799 (1870). Accordingly, "with few exceptions" courts will enforce "*any* condition[]" in a license granting "the right to manufacture or use or sell [a patented] article." *E. Bement & Sons*, 186 U.S. at 91 (emphasis added); *see also General Elec-*

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[21] Petitioner argues (Br. 29-31) that farmers are not licensees because they are purchasers. This is an incorrectly formalistic analysis. Farmers are both purchasers and licensees. They purchase soybean seeds, which they then use to "make" new patented articles under the authority of their license. Monsanto is paid a license fee each time a farmer obtains these rights, whether or not Monsanto sells the soybean seeds. Moreover, unlike the transactions in the cases petitioner cites, the sale of Roundup Ready® soybeans is "a qualified sale for less than value for limited use." *Bauer*, 229 U.S. at 16 (cited in Pet. Br. 30). Where a transaction is, in fact, a sale for full value, courts must treat it as such whether it is termed a sale or a license. But Monsanto plainly does not receive full value for its invention when the first authorized sale of Roundup Ready® seeds to a farmer is made. *See* pp. 44-45, *infra*.

tric, 272 U.S. at 489 (a patent owner may grant a license "upon *any* condition the performance of which is reasonably within the reward which the patentee by the grant of the patent is entitled to secure" (emphasis added)). Petitioner *agrees* that such limited licenses are well-accepted and that activity outside of the license grant can be remedied through an infringement action. Br. 26 ("Where a patentee licenses someone else to make patented products, the patentee may retain rights under the patent to control the terms upon which the products are sold.").

A license defines the boundaries of a licensee's rights. A licensee may, for example, obtain the right "to make and use the patented articles but [not the] right to sell them." *General Electric*, 272 U.S. at 490. Such a licensee "acquires an interest in the articles made"—he owns and may use the objects themselves—"[b]ut if he sells them he infringes the right of the patentee, and may be held for damages and enjoined." *Id.*; *see also, e.g.*, *Cole* v. *Hughes Tool Co.*, 215 F.2d 924 (10th Cir. 1954) (describing patentee's practice of manufacturing and leasing patented drill bits).

The license likewise limits the rights a licensee can convey to others; just as a licensee may not exceed its own authorization from the patentee, it also may not authorize another party to exceed that authority. *See Mitchell*, 83 U.S. (16 Wall.) at 548; *see General Talking Pictures*, 304 U.S. at 181 (holding that the licensee "could not convey to petitioner what both knew it was not authorized to sell"). Thus because no grower was ever licensed the right to plant, or to authorize others to plant, harvested soybeans, no grower was ever in a position to transfer that right to petitioner—whether petitioner obtained the soybeans he planted from a

grain elevator, a neighboring farmer, or his own harvest.

B. This Court Has Never Held That A Sale *Per Se* Renders Unenforceable Reasonable Restrictions Imposed By A License

Petitioner does not challenge the particular restrictions Monsanto places on use of its patent technology or Monsanto's right to impose use, making, and sale restrictions on its licensees. Instead, he argues broadly (Br. 13, 26-28) that a patentee cannot enforce any such restrictions through an infringement action if the license is accompanied or followed by an authorized sale. Thus, petitioner argues, because Monsanto and licensed seed companies sold Roundup Ready® seeds to licensed farmers, and because Monsanto authorized those farmers to sell their harvest to grain elevators as a commodity, Monsanto's patent rights with respect to petitioner's use of the soybeans purchased from the grain elevator are exhausted. According to petitioner, these sales provided him greater rights in those soybeans than the licensee-farmer who sold them to the grain elevator had the right to convey.[22] That is incorrect.

1. This Court's decisions do not establish any such *per se* rule against enforcing reasonable conditions following a sale. To the contrary, the Court has made

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[22] Petitioner cannot establish that the elevator's sale of soybeans *to him* was authorized by Monsanto. Monsanto has no contractual relationship with grain elevators and does not authorize elevators to do anything with its technology. Nor is there any reason to believe Monsanto would authorize grain elevators to sell soybeans to growers for use as seed, because federal and state laws effectively prohibit grain elevators from selling commingled soybeans for use as seed. *See* n.6, *supra*.

clear that a patentee may commercialize its invention by authorizing certain use rights and not others, even when there has been a sale of the article embodying the invention. *See, e.g., Mitchell*, 83 U.S. (16 Wall.) at 548 (exhaustion is triggered "where the sale is absolute, and *without any conditions*" (emphasis added)); *Keeler* 157 U.S. at 663 ("'[W]hen [a patent owner] has himself constructed a machine and sold it *without any conditions*'" the owner's rights in the machine are exhausted. (emphasis added)).

In *Mitchell*, a patent owner, Taylor, granted an exclusive license to Bayley to make, use, and license others to make and use a patented hat-felting machine in Massachusetts and New Hampshire. 83 U.S. (16 Wall.) at 548-549. The license expressly provided that "the licensee '*shall* not, *in any way, or form, dispose of, sell, or grant*, any license to use the said machines beyond the expiration' of the original [patent] term." *Id.* at 549. Bayley "*sold* [four] machines" to Mitchell and gave him a license to "run and use" the machines in Haverhill, Massachusetts, without any other restrictions or conditions. *Id.* (emphasis added). After the patent was extended for a further term, Mitchell continued to use the machines, thus exceeding the rights that the patent owner had licensed Bayley to convey. *Id.*

The Court concluded that Mitchell's extended-term use was infringement. Because Bayley (the licensee) had never obtained the right to authorize use beyond the end of the original patent term, he could not pass that right on to Mitchell (the purchaser). "[H]owever innocent [he] may [have] be[en]," Mitchell had no right to continue using the machine and had therefore in-

fringed when he did so. *Mitchell*, 83 U.S. (16 Wall.) at 550.[23]

The Court reached a similar conclusion in *General Talking Pictures*. That case arose after a licensee made and sold a patented amplifier for commercial use, even though he had been licensed to make and sell amplifiers only for private use. In an infringement suit brought against the purchaser, this Court held that the sale had not exhausted the patent owner's right to exclude the purchaser from using the amplifier commercially. The Court reasoned that the licensee "could not convey to [the purchaser] what both knew it was not authorized to sell." 304 U.S. at 181.

In *American Cotton-Tie*, the patent owner itself made and sold patented metal ties for cotton bales stamped with the statement "Licensed to use once only." 106 U.S. at 91. That condition "was deemed of importance by the Court" when it upheld a patent-infringement suit against those who had violated the condition by refurbishing spent ties for reuse. *See Aro*, 365 U.S. at 343 n.9.

This case is materially indistinguishable. Like Bayley in *Mitchell* and the American Transformers Company in *General Talking Pictures*, farmers and inde-

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[23] The Court did not, as petitioner contends (Br. 25-26), reach that conclusion because the original sale from Bayley to Mitchell was "unauthorized." Had that been the Court's rationale then it would have held, which it did not, that Mitchell's infringement began as soon as he started to use the machines during the original patent term. To the contrary, the Court framed the question before it as whether Mitchell and his partners were "authorized to continue to use the four machines just the same under the extended letters-patent *as they had the right to do* under the original patent, when the purchase was made." 83 U.S. at 549 (emphasis added).

pendent seed companies make new patented articles under licenses that limit the use of those articles, even after a sale. Just as the licensees in those cases could not transfer—and their purchasers could not acquire—rights the licenses themselves did not authorize, farmers and independent seed companies could not have conveyed to downstream purchasers, like the grain elevator and petitioner, rights expressly withheld in their licenses with Monsanto.[24]

2. Petitioner tries to dismiss *Mitchell* and the other relevant precedents by arguing (Br. 26) that in the nineteenth century, the word "conditions" always meant something different than it does today. But other courts and commentators at the time understood that a patentee or its licensee could sell a patented product and also transfer to the purchaser fewer than all rights to use the product. For example, relying on *Mitchell*, the court in *Porter Needle Co.* v. *National Needle Co.* explained that "courts have permitted a severance of ownership and right of use, if the patentee has chosen to dissever them, and if his intent is not doubtful." 17 F. 536, 537-538 (C.C.D. Mass. 1883), *approvingly cited by General Talking Pictures*, 304 U.S. at 182. Similarly, in *International Pavement Co.* v. *Richardson*, 75 F. 590, 593 (C.C.E.D. Pa. 1896), the court, relying on *Mitchell*, stated: "The defendant purchased, not the machines by themselves, but the machines in connection with the license which regulated and limited their use. It was one transaction." The

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[24] Nor would there be any basis for analyzing restricted sales made by the patentee itself any differently. *See Aro*, 365 U.S. at 343 n.9 (discussing restricted sale by patentee in *American Cotton-Tie*, 106 U.S. at 91). To hold otherwise would be to exalt form over substance.

leading patent law treatise of the late-nineteenth century likewise stated: "Not only may the patentee impose *conditions*, limiting the use of the patented article, upon his grantees and express licensees, but any person having the right to sell may at the time of sale restrict the use of his vendee within specific boundaries of time or place or method[.]" 2 Robinson, *The Law of Patents for Useful Inventions* § 824 (1890) (emphasis added). Indeed, during the era that petitioner and the United States (U.S. Br. 30-31) claim this Court was applying a *per se* rule against the enforcement of any such condition, this Court found exhaustion only in cases involving *unrestricted* sales. *See, e.g., Keeler*, 157 U.S. 659; *Hobbie* v. *Jennison*, 149 U.S. 355 (1893); *Adams*, 84 U.S. (16 Wall.) 453.[25]

3. No subsequent decision of this Court has changed that established law. To the contrary, the Court has rendered conditions following a sale unenforceable in only two circumstances: resale price restrictions and tying arrangements. *See, e.g., Univis*, 316 U.S. 241 (fixing resale price); *United States* v. *Masonite Corp.*, 316 U.S. 265 (1942) (fixing resale price); *Motion Picture Patents Co.*, 243 U.S. 502 (tying arrangement); *Straus* v. *Victor Talking Mach. Co.*, 243 U.S. 490 (1917) (fixing resale price); *Bauer & Cie* v. *O'Donnell*, 229 U.S. 1 (1913) (fixing resale price).

The Court rejected these specific conditions because of their anti-competitive effects. In *Motion Pic-*

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[25] Petitioner makes much (Br. 33) of the fact that the licensee in *Adams* had no right to use the invention more than 10 miles outside Boston. Unlike in *Mitchell* and in this case, however, the licensee in *Adams* had no restrictions on the use rights it could convey to others in a sale, which is why exhaustion applied in that case but does not apply here.

tures Patents, for example, the Court voided a requirement that purchasers of a patented projector show only the patentee's unpatented films because such a requirement would be "[t]he perfect instrument of favoritism and oppression," allowing the patent owner to leverage its monopoly in one field (patented projectors) to obtain a monopoly in another (unpatented film). 243 U.S. at 515; *see also id.* at 517 (pointing to recent passage of the Clayton Act as "confirm[ation]" of the Court's decision). Likewise, in *Strauss*, the Court set aside a license that dictated re-sale prices after concluding that "[t]he scheme of distribution [was] not a system designed to secure ... a reasonable use of [the patented] machines, within the grant of the patent laws, but [was] in substance and in fact a mere price-fixing enterprise." *Id.* at 501. In each of these cases, the Court emphasized these anti-competitive effects.[26] "[C]lear[ly] ... [the] practical consequences" of the restrictions disallowed by these cases differ substantially from "those attending restrictions on the time, place or purpose of use." Powell, *The Nature of A Patent Right*, 17 Colum. L. Rev. 663, 685-686 (1917). Contrary to the historical narrative of petitioner and the United States, it thus "seem[ed] clear" to a leading commentator immediately after *Motion Picture Patents* was decided that this Court's decision had "not impugn[ed] the authority of ... earlier decisions sustaining the validity of [such] restrictions." *Id.* That observation remains true today.

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[26] Later cases are to similar effect. In *Univis*, for example, the Court applied its earlier rule against resale price restrictions to the sale of an incomplete article that is destined to be finished by the purchaser. 316 U.S. 241.

There is no allegation of improper tying, price-fixing, or other anti-competitive conduct here, nor could there be. Monsanto places no restrictions on the price at which licensed seed companies sell their soybeans. Likewise, Monsanto does not tie the right to use Roundup Ready® seeds to the purchase of any other product or technology. And, because Monsanto licenses its Roundup Ready® trait to dozens of other seed manufacturers, farmers can obtain the right to use that trait in combination with other companies' seed varieties.

The United States asserts (Br. 31) that in *Quanta*, the Court "describe[d] the patent-exhaustion doctrine in terms that leave little room for enforcement through patent law of post-sale restrictions on use or resale." But that ignores "important aspects" of the facts that distinguish *Quanta* from this case. *Quanta*, 553 U.S. at 636. In *Quanta*, the Court found that the relevant license "broadly permitted" Intel to make, use, and sell the patented invention. *Id.* Here, by contrast, farmers' and seed companies' rights are expressly limited by the Technology Agreement, which forbids saving harvested soybeans for planting, or transferring those soybeans for others to plant. Under the United States' argument, the *only* fact that mattered in *Quanta* was that Intel was authorized to make the specific sale it made to Quanta, and (contrary to this Court's analysis) it did not matter that (1) "[n]othing in the License Agreement restrict[ed] Intel's right to sell its microprocessors and chipsets to purchasers who intend to combine them with non-Intel parts"; or that (2) "[n]o conditions limited Intel's authority to sell." *Id.* at 636-637. But the Court would have had no reason to so thoroughly probe these "important aspects" if all that mattered was whether Intel's specific sales to Quanta

were authorized—which no party in that case disputed. *Id.* at 636.

C. A *Per Se* Rule Would Ill-Serve The Purposes Of The Patent Act And The Patent Exhaustion Doctrine

1. The *per se* rule that petitioner and the United States urge this Court to adopt would expand patent exhaustion into many contexts ill-suited to its rationale. In explaining the basis for exhaustion, the Court has indicated that the Patent Act's purpose of providing incentives to innovation is "fulfilled," *Univis*, 316 U.S. at 251, when a patent owner has "received *all* the royalty or consideration which he claims for the use of his invention," *Adams*, 84 U.S. (17 Wall.) at 456 (emphasis added). Put another way, "[t]he test" for exhaustion is whether "it may fairly be said that the patentee has received his reward for the use of the article." *Masonite Corp.*, 316 U.S. at 278. But there are many circumstances in which a patent owner cannot receive an adequate reward for the use of his invention if the first authorized sale of any article embodying that invention renders unenforceable all patent restrictions on its use. This case well illustrates the point.

Farmers who obtain the right to grow a single crop of Roundup Ready® soybeans pay a tiny fraction of what Monsanto would have to charge for the right to make, use, and sell copies of Monsanto's technology through multiple generations of seeds. *See Monsanto Co.* v. *Ralph*, 382 F.3d 1374, 1384 (Fed. Cir. 2004). Because farmers can readily reproduce plants containing the Roundup Ready® trait—and in the case of soybeans, can create millions of copies within a few years—Monsanto would quickly lose the ability to commercialize its invention if it were not able to limit

reproduction. To recover its investment absent such restrictions, Monsanto would have to charge farmers who purchased the first generation of soybeans an astronomical sum. That result would be both undesirable and impracticable; in all likelihood, Monsanto would be unable to bring its invention to market.[27]

But under the Federal Circuit's correct application of patent exhaustion principles, Monsanto is able to recover its investment by charging grower-licensees a reasonable fee each time they use the invention in an authorized way—*i.e.*, each time they make an authorized retail purchase of Roundup Ready® seeds to produce a commercial crop. This licensing program, under which Monsanto can recover its investment across multiple transactions, allows Monsanto to make use of its invention affordable. *Cf. Mitchell*, 83 U.S. (16 Wall.) 544 (permitting patent owner to obtain his reward in two installments, one for the original patent term, and the second for the extended term). But unlike in *Quanta*, it does not lead to Monsanto being paid twice for the *same* right.

Requiring a patent owner, in every case, to charge in a single transaction the amount necessary to compensate for all patent rights would eliminate beneficial uses for many inventions. Few customers need, and fewer could afford, unlimited rights in a patented prod-

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[27] Furthermore, if petitioner's rule were adopted, then not only every farmer, but also every seed company could reproduce Monsanto's biotechnology without limitation. Once a seed company possessed even a single "exhausted" soybean containing the Roundup Ready® trait, it could massively reproduce that trait without making any further payment to Monsanto and could bring seeds containing the trait to market without the need to recoup Monsanto's research and development costs.

uct like those at issue here. If patentees are not able to authorize sales transferring fewer than all patent rights at a reduced price, then customers will have to pay for rights they do not need and in many instances will be priced out of the market entirely. Customers may desire, for example, to make only research use of a product and not to commercialize it themselves; petitioner's proposal would prevent such an arrangement from being given effect under the patent laws whenever the product was sold to such customers—which, especially in the case of products like seeds and bacteria that are consumed in their intended use, may be the only feasible way that the product can be transferred. Curtailing patent owners' licensing flexibility could well prevent inventors from developing or commercializing their inventions entirely. Undoubtedly, that is the decision that inventors investigating other readily replicable technologies will make if petitioner's arguments are accepted.

2. This case presents a particularly forceful context for concluding that the sale of an item embodying a patented invention does not *per se* eliminate the patentee's right to limit its licensees' use of that item. For more traditional technologies, the patentee can license use of the patented invention without any transfer of title by leasing a patented article or licensing manufacture from unpatented raw materials without authorizing sale. But the *only* practical way to commercially license Monsanto's patented invention is to convey it in crop seeds to farmers. These vehicles for delivering the patented technology to licensees are fully consumed when used; they cannot be leased or rented because Monsanto could not require return of those articles upon completion of the licensed use. Likewise, Monsanto cannot provide a bare license to make the pa-

tented invention because, as a practical matter, soybean seeds containing the patented technology can be produced only through propagation and cross-breeding of a seed that already contains the patented invention. That Monsanto *must* accompany each license for a farmer to manufacture the patented technology with a sale of seeds that will be consumed when planted should not convert a limited license to use the technology to grow one commercial crop into a blanket authorization to become a direct competitor of Monsanto.

Monsanto's authorization to farmers to sell their crop to soybean consumers likewise does not, as petitioner would have it, convert the limited license of the Technology Agreement into an unrestricted license for customer use, such as was at issue in *Quanta* or *Adams*. Because of the nature of the patented technology, the farmer *must* be permitted to sell his crop for consumption to benefit from his licensed use rights. Not allowing him to do so would defeat the purpose of his license. But unlike the farmer, the farmer's authorized customers (consumers of soybeans) are not paying for—and have no use for—the trait that allows soybeans to tolerate glyphosate.[28] The farmer is thus wholly unlike Intel and Lockhart & Seeyle in *Quanta* and *Adams*, respectively. The farmer took his license from Monsanto because he wanted to benefit from *his own use* of the invention. By contrast, Intel and Lockhart & Seeyle took a license not because they would benefit themselves by using it, but because they want-

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[28] As petitioner notes (Br. 5, 32), no distinction (price or otherwise) is made between soybeans containing Roundup Ready® technology and conventional soybeans when they are sold for consumption purposes rather than as seed. To the consumer, there is no difference.

ed to sell a product with which *their customers would use* the invention. There is no sound reason to treat these two completely different licenses identically under the patent exhaustion doctrine.

3. Petitioner's proposal would give parties an incentive to engage in inefficient, pretextual transactions solely to extinguish patent rights. *See Mallinckrodt, Inc.* v. *Medipart, Inc.*, 976 F.2d 700, 705 (Fed. Cir. 1992).[29] For example, petitioner evidently would accept that a company that purchased a license to "use and sell for research purposes only" a patented therapeutic antibody-producing hybrid cell line would infringe the patent if it then made commercial sales of the antibodies that the cell line produced; that commercial use of the antibody would exceed the scope of the limited license. But, under petitioner's submission, if the laboratory were to sell that cell line to a third party, and its customer then used the cell line to make antibodies for commercial sale, the customer would not be infringing the patent. That result makes little sense, as neither the licensee nor its customer would have ever paid the patentee for rights to use the patented cell line for commercial purposes. Moreover, the laboratory could

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[29] Petitioner and the United States overstate the holding in *Mallinckrodt*. The Federal Circuit held that a patentee's right to exclude "may be waived in whole or in part," and correctly noted that no decision of this Court has ever held that all restrictions accompanying the sale of patented goods are *per se* unenforceable. *Mallinckrodt*, 976 F.2d at 703-704. The Federal Circuit, however, did not hold in *Mallinkrodt* that all conditions imposed by a patentee prevent application of the patent exhaustion doctrine—or even that the specific condition imposed in that case did so. It merely held that the district court erred by holding "that no condition can be placed on the sale of patented goods, for any reason." *Id.* at 708. It remanded the case to the district court for further proceedings. *Id.* at 709.

then obtain for itself the right to make antibodies for commercial use by reacquiring the patented cell line back from its customer, again without paying the patentee anything for those rights.

It is not difficult to see how such pretextual transactions would develop in this context. Petitioner understood that his license from Monsanto prohibited him from saving his own harvested soybeans for planting. *See* JA21a-22a, JA158a-159a. But if he is correct that a farmer's sale of harvested soybeans to a grain elevator exhausts Monsanto's patent rights in those soybeans, then petitioner could sell his harvested soybeans to the elevator and at the same time buy back soybeans for planting in the next season. Or, he could arrange for another farmer to sell his harvested soybeans to the elevator and then buy some of those soybeans from the elevator for replanting—even though, under the Technology Agreement, he plainly would not be authorized to plant soybeans that he purchased directly from another grower. The patent exhaustion doctrine was never intended to be an engine of gamesmanship.

4. Petitioner argues (Br. 44) that a *per se* rule would "comport[] with the strong and longstanding policy against restraints on the alienation of personal property." But patent rights *always* act as a restraint on alienation of personal property, as it is always an act of infringement to "sell" an article that embodies another's patent rights without authorization. 35 U.S.C. § 271(a); *cf. Asgrow*, 513 U.S. at 188 n.3 ("Applying the rule disfavoring restraints on alienation to interpretation of the PVPA is rather like applying the rule disfavoring restraints upon freedom of contract to interpre-

tation of the Sherman Act."). [30] Moreover, the regime petitioner proposes would not eliminate restraints: as petitioner observes, even if his position were adopted, Monsanto could still place limits through complex contractual arrangements. *See* Br. 55-56 ("Monsanto could legally require farmers who buy first-generation Roundup Ready® seeds to sell progeny seeds only to grain elevators that agree to obtain promises from purchasers of the progeny seed not to plant them."); *id.* 26 ("Conditions in a license agreement may be enforced by patent law where restrictions on authorized purchasers cannot be so enforced." (capitalization altered)).

* * *

Experience has shown that there may be many circumstances in which patentees desire to offer, and licensees desire to acquire, less than the full set of rights to use a patented invention, even when the most or only feasible way to commercialize the invention includes a sale of an article embodying it. This case presents exactly such a circumstance. Monsanto could not, as a practical matter, commercialize its invention except by (a) authorizing seeds containing that technology to be sold to farmers, and (b) offering farmers a limited license to use those seeds to make and sell progeny soy-

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[30] Recent decisions of this Court in a related context have given less weight to "the common-law rule against restraints on alienation" and overruled precedents that had relied on that rule. *Leegin Creative Leather Prods., Inc.* v. *PSKS, Inc.*, 551 U.S. 877, 887-888 (2007) (overruling *Dr. Miles Med. Co.* v. *John D. Parke & Sons Co.*, 220 U.S. 373 (1911)); *see also Continental T.V. Inc.* v. *GTE Sylvania, Inc.*, 433 U.S. 36, 53 n.21 (1977) (overruling *United States* v. *Arnold, Schwinn & Co.*, 388 U.S. 365 (1967)). As in *Leegin* and *Continental T.V.*, so too here the Court "should be cautious about putting dispositive weight on doctrines from antiquity but of slight relevance." *Leegin*, 551 U.S. at 888.

beans. This Court's precedents do not forbid such arrangements from being given effect under the patent laws, nor do the patent laws require Monsanto and farmers to abandon such a mutually beneficial relationship.

III. Contractual Remedies Alone Are Inadequate To Encourage Innovation In Readily Replicable Technologies

Without the prospect of meaningful patent protection, Monsanto and other companies would have little reason to "risk the often enormous costs in terms of time, research, and development" necessary to develop technologies such as those at issue in this case. *Kewanee Oil Co.* v. *Bicron Corp.*, 416 U.S. 470, 480 (1974). Petitioner and certain amici argue that Monsanto and others could use contracts to protect their investments equally well. *See* Pet. Br. 55-57; American Antitrust Institute Br. 20-36; CFS Br. 25-26. They are wrong for several reasons.

First, contrary to his suggestion (Br. 55-56) that Monsanto could maintain control of its patented technology simply by signing contracts with grain elevators,[31] under petitioner's theory, Monsanto would have to complete the impossible task of establishing contractual privity with *every* person who might try to misappropriate its patented technology. Otherwise, anyone not in privity with Monsanto who obtained even a single soybean descended from a Roundup Ready® seed

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[31] The premise of even that assertion is not self-evidently correct: Monsanto has no direct relationship with grain elevators in the process of bringing harvested soybeans to market, and there is no clear reason why a grain elevator would believe itself obligated to sign such a contract with Monsanto.

purchased in an authorized sale could cultivate an unlimited number of soybeans containing Monsanto's patented technology without ever having to pay Monsanto. Such a soybean could be purchased from another grower or a grain elevator, plucked from a field or road, or snatched off the back of a truck. Monsanto could never identify, let alone enter into a contract with, every such individual. Even the growers and seed companies that currently contract with Monsanto would have no reason to continue those contracts given how easy it would be to obtain a single "exhausted" soybean that would eliminate the need to pay any royalties to Monsanto.[32]

Second, contractual remedies against breaching parties would be grossly inadequate to address the harm caused by a breach. If, for example, a grower breached his Technology Agreement by selling his harvest to twenty-five neighbors, any injunction Monsanto could obtain against the grower who breached would do nothing to prevent the neighbors from making unlimited copies of the technology. And Monsanto would be unable to obtain a contract-based injunction against the neighbors' replication of soybeans embodying the invention. *Cf. eBay Inc.* v. *Mercexchange, LLC*, 547 U.S. 388, 395 (2006) (Roberts, C.J., concurring) ("This 'long tradition of [granting injunctive relief for patent infringement]' is not surprising, given the difficulty of protecting a right to *exclude* through monetary remedies that allow an infringer to *use* an invention against a patentee's wishes[.]"). Nor is it likely that a contract damages award would fully account for any injury

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[32] For this reason, petitioner's contention (Br. 57) that commodity soybeans would not compete with first-generation Roundup Ready® seed is incorrect.

caused by the neighbors. Monsanto would likely be able to recover damages for lost sales directly attributable to unauthorized sale by the grower (the breaching party). But Monsanto might not be able to recover damages for lost sales caused by the neighbors' unauthorized replication of the invention because of the difficulty of "establishing" those damages "with reasonable certainty," *Restatement (Second) Contracts* § 352 (1981), and of showing that the full extent of those damages were reasonably foreseeable to the breaching party, *id.* § 351.[33] And even if Monsanto were able to prove such damages, no breaching party—not even the largest seed company—could afford to compensate Monsanto for the lost sales of Roundup Ready® seeds caused by numerous other parties' unlimited replication of the invention.

Third, for Monsanto to even attempt to establish a wholly contract-based enforcement regime would require an enormous web of contracts.[34] Petitioner pro-

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[33] As the court explained in *Monsanto Co.* v. *McFarling*, 363 F.3d 1336, 1348-1349 (Fed. Cir. 2004):

> Proof of loss is of course substantially more difficult when the breaching farmer supplies or sell the seed to another farmer in violation of the agreement. If a farmer transfers seed to a third-party for replant, Monsanto not only has no privity of contract with the purchasers, but it also faces difficulty tracing the seed, locating and deposing the individuals who purchased it, and thus determining the amount of harm caused by the breach. In this situation, the difficulty of proof of loss would be considerable.

[34] Petitioner's amici suggest that Monsanto chose to market Roundup Ready® soybeans in other countries relying on contract, rather than patent, rights. CFS Br. 26-27. That is incorrect. Monsanto does not market Roundup Ready® soybeans at all in Great Britain. Monsanto established its royalty collection system

poses (Br. 55-56) that Monsanto require licensed farmers to sell only to grain elevators that separately contract with Monsanto. Presumably, petitioner imagines that those contracts would in turn permit sales only to parties that have also contracted with Monsanto. And so on, until every potential user of Monsanto's patented technology has signed a Monsanto contract. The transaction costs, and disutility, of such an approach would be immense.

In sum, petitioner's position would not simply move Monsanto from one legal regime (patent law) to another (contract law). It would remove Monsanto's technology from effective legal protection entirely.[35] And it would

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in Brazil on the basis of patent rights it held there, and which Monsanto continues to seek to enforce. In Argentina, Monsanto's patents were nullified (along with numerous other similar patents from other companies) by the Argentine courts. As a result, the technology rapidly spread through piracy. Monsanto repeatedly sought to implement a contract-based model for royalty collections, all without success. Indeed, the source cited by petitioner's amici itself states: "[a]s can be expected, monitoring of these private contracts is not easy and they do not substitute [for intellectual property] law." *See* Campi, *Innovation and Intellectual Property Rights. The Case of Soybean Seeds in Argentina and the U.S.*, http://www.ungs.edu.ar/globelics/wp-content/uploads/2011/12/ID-140-Campi-Privatization-of-Knowledge-Intellectual-Property-Right.pdf (cited by CFS Br. 26).

[35] The suggestion that Monsanto could protect Roundup Ready® technology with a PVPA certificate (CFS Br. 26) is misplaced because a PVPA certificate could not be issued on the Roundup Ready® technology; PVPA certificates are limited to specific plant varieties. 7 U.S.C. § 2402. Further, the "research exception" to infringement under the PVPA, *id.* § 2544, permits the purchaser of a plant covered by a PVPA certificate to cross-breed it with other plants to develop new plant varieties which can be grown and sold without violating the PVPA. *See also id.* § 2483(a)(1).

similarly deny protection to other inventors who are seeking to develop revolutionary technological advances.

CONCLUSION

The judgment of the court of appeals should be affirmed.

Respectfully submitted.

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REPLY BRIEF

No. 11-796

IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, *et al.*,

Respondents.

ON WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

REPLY BRIEF

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ARGUMENT

According to Monsanto and contrary to 150 years of patent-exhaustion decisions from this Court, authorized sales of Roundup Ready® seeds do not exhaust patent rights in those seeds. Under Monsanto's rule, farmers never really own the seeds they buy and tend, although they assume all risks associated with the business of farming, including the risk that the seeds they plant may never produce a viable crop. And under Monsanto's rule, even though Monsanto expressly authorizes farmers to sell progeny seeds to grain elevators without imposing any restrictions on the elevators, Monsanto can still control the use of those seeds by those who buy them from the elevators in unrestricted sales. Monsanto's rule not only conflicts with the patent-exhaustion principles laid down by this Court, it also threatens the free flow of commerce in products having an ability to reproduce, such as soybean seeds. According to Monsanto, once a patentee chooses, as Monsanto did here, to release its invention into the stream of commerce by authorized sales of seeds embodying the invention, no buyer can obtain clear title. Although seeds purchased in unrestricted sales have the ability to reproduce for generations, Monsanto maintains that it may freely demand repeated payments for uses over those several generations.

Due to Monsanto's distribution model—which encouraged the commingling of progeny seeds with seeds lacking the patented trait to the point where grain elevators now contain relatively few seeds lacking the patented trait—Monsanto's rule would effectively eliminate a farmer's ability to buy less-expensive seeds. Fortunately, patent exhaustion thwarts Monsanto's

attempt to achieve this unwarranted extension of the patent monopoly.

If Monsanto wants to control use of the invention in the hands of purchasers down the distribution chain, contract law provides the proper mechanism. Post-sale restrictions should be enforceable only in instances of genuine agreement and be subject to antitrust scrutiny. Monsanto's rule should be rejected because it is contrary to the law and unsupported by sound policy.

I. AN AUTHORIZED SALE OF THE INVENTION TRIGGERS EXHAUSTION, INCLUDING A RIGHT TO USE THE ARTICLE SOLD "FOR THE ORDINARY PURSUITS OF LIFE"

Monsanto all but abandons the infringement theory it advanced before the district court, i.e., that Bowman allegedly infringed by *planting* seeds that he purchased from a grain elevator. JA14a. Instead, Monsanto chooses to focus on the seeds *grown* by Bowman. *See* Resp'ts' Br. 14–28. By shifting its infringement theory, Monsanto tries to avoid the central issue, which is whether a purchaser who buys a patented seed "for the purpose of using it in the ordinary pursuits of life" should be permitted to use that seed for planting by virtue of the fact that the seed has become "his private, individual property, not protected by the [patent] laws of the United States." *Bloomer v. McQuewan*, 55 U.S. (14 How.) 539, 549–50 (1853).

Monsanto does not fundamentally disagree with the notion that the initial authorized sale of a patented item terminates all patent rights to that item. *See* Resp'ts' Br. 15–16 (quoting *Quanta Computer, Inc. v. LG Elecs., Inc.*,

553 U.S. 617, 625 (2008)). Indeed, Monsanto states that "[p]atent exhaustion, where it properly applies, allows the purchaser of an article embodying an invention to use and resell that particular article." Resp'ts' Br. 15 (emphasis omitted). That statement comports with the proposition that "when the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use." *Adams v. Burke*, 84 U.S. (17 Wall.) 453, 456 (1873). But Monsanto's principal argument negates patent exhaustion by creating a broad exception for self-replicating technologies. *See* Resp'ts' Br. 15–28.

For example, Monsanto asserts that patent exhaustion should "appl[y] only to the specific article that was sold in an authorized sale" and not to any progeny produced as the result of that article's lawful use. Resp'ts' Br. 15–16. But no case cited by Monsanto for this proposition involved the use of self-replicating inventions, and each case should be read for the proposition that Monsanto ignores: exhaustion provides an absolute right to *use* the article sold free of any infringement claims. *See, e.g.*, *Quanta*, 553 U.S. at 630. In *Quanta*, this Court reiterated "the longstanding principle that, when a patented item is 'once lawfully made and sold, there is no restriction on [the item's] *use* to be implied for the benefit of the patentee.'" *Id.* (quoting *Adams*, 84 U.S. at 457). Additionally, in *United States v. Univis Lens Co.*, 316 U.S. 241, 249 (1942), this Court explained that "[a]n incident to the purchase of any article, whether patented or unpatented, is the right to use and sell it." Moreover, in *United States v. General Electric Co.*, 272 U.S. 476, 489 (1926), this Court held "that where a patentee makes the patented article and sells it, he can exercise no future

control over what the purchaser may wish to do with the article after his purchase." Accordingly, this Court's exhaustion doctrine confers on a purchaser the absolute right to *use* the article sold free of any infringement claims.

"The right to use is a comprehensive term and embraces within its meaning *the right to put into service any given invention.*" *Bauer & Cie. v. O'Donnell*, 229 U.S. 1, 10–11 (1913) (emphasis added). Under this principle, Monsanto has the priority of "make" over "use" backwards.

Under Monsanto's view, the purchaser of patented seeds lacks the very right to use the invention for an ordinary purpose—planting. That is no patent-exhaustion doctrine at all. It is "an end-run around exhaustion" like that advanced by the patentee in *Quanta* for method claims. *See* 553 U.S. at 630. In *Quanta*, this Court rejected the "argument that method claims, as a category, are never exhaustible." *Id.* It should do the same here with Monsanto's argument that exhaustion never applies to self-replicating products.

As the Government notes, this Court in *Quanta* "repeatedly describe[d] the patent-exhaustion doctrine in terms that leave little room for enforcement through patent law of post-sale restrictions on use or resale." U.S. Br. 31. Monsanto contends this ignores "important aspects" of the facts there that differ from the facts here. Resp'ts' Br. 43. In particular, Monsanto maintains that Intel's sales of microprocessors and chipsets to Quanta were authorized, whereas farmers were not authorized to sell progeny seeds to grain elevators for planting purposes. *Id.*

But Monsanto admits that farmers had rights under the applicable Technology Agreements to sell progeny seeds to grain elevators, noting that those agreements "authorize[] farmers to use Roundup Ready® seeds to grow a 'single commercial crop' that will also contain the patented gene technology." Resp'ts' Br. 4 (quoting JA29a). According to Monsanto, "A farmer is therefore authorized *to sell the crop* he grows from Roundup Ready® seeds for consumption *through customary commercial channels*—to an agricultural processor, for example, or to a grain elevator that in turn resells harvested crops to processors." *Id.* (emphasis added).

While Monsanto's Technology Agreements impose a post-sale "single commercial crop" use restriction on first-generation seeds, they also expressly authorize sales of that crop's progeny as commodity seeds. Much of Monsanto's briefing addresses the post-sale use restriction on first-generation seeds. But Monsanto overlooks its express authorization for farmers to sell progeny seeds through customary channels.

Thus, grain elevators purchased authorized, i.e., noninfringing, seeds. And those elevators were authorized to sell those seeds to the public in unrestricted sales. JA133a; JA138a; PA8a; *see also* A0284–85; A0288–91; A0292–95; A0494. Consequently, those products passed outside the patent monopoly. *See McQuewan*, 55 U.S. at 549. Monsanto could not sue its farmers-sellers for patent infringement because their sales of progeny seeds to grain elevators were authorized. Likewise, subsequent sales of progeny seeds to Bowman did not give Monsanto a retroactive cause of action for patent infringement against the grain elevators or the farmers-sellers.

In *Quanta*, this Court decided that patent exhaustion applied to both product claims and method claims even though Quanta only purchased components used to construct the claimed computer system. 553 U.S. at 628–30, 638. It reasoned that sales of the components triggered exhaustion because the components "substantially embody the patents in suit." *Id.* at 621. Similarly, sales of the seeds at issue here should trigger exhaustion because they completely embody Monsanto's patent claims on seeds, and the seeds "substantially embody" the plants that grow from them as well as the seeds produced by those plants. Monsanto has asserted claims covering a "plant cell," a "plant," and a "seed of the plant." *See, e.g.*, JA55a–58a; JA62a–63a; SA19 col. 165 ll. 15–17; SA19 col. 165 ll. 18–20; SA19 col. 165 ll. 30–32. Since seeds self-replicate, subsequent generations are embodied in previous generations according to this Court's reasoning in *Quanta*. Further, like the patentee in *Quanta*, Monsanto has asserted a method claim, i.e., claim 130, which specifies "planting" a seed or plant containing the glyphosate-resistant trait and then "applying" glyphosate to control weeds. SA19 col. 165 l. 49–col. 166 l. 5. Under *Quanta*, the authorized sale of seeds embodying this method exhausts the method claim as well as the asserted product claims.

According to Monsanto, farmers plant patented seeds and sell their progeny to grain elevators as a matter of grace not right. But this Court's case law provides no support for Monsanto's version of patent exhaustion. As this Court explained in *Quanta*, "For over 150 years this Court has applied the doctrine of patent exhaustion to *limit* the patent rights that survive the initial authorized sale of a patented item." 553 U.S. at 621 (emphasis added).

Accordingly, it makes no difference how broadly Monsanto interprets the exclusive right to "make" the invention; where that right is inseparable from ordinary "use," the patent law must be strictly construed in a manner that preserves a purchaser's right to use the invention. *See id.* This Court has explained that when a patented article "passes to the hands of the purchaser," it "passes outside" the scope of the patentee's rights and "is no longer under the protection of the act of Congress." *McQuewan*, 55 U.S. at 549.

The patent-exhaustion doctrine represents a reasonable application of ordinary personal-property principles to patented articles that comports with the statutory scheme. *See* 35 U.S.C. § 261. "Under the exhaustion doctrine, when a patent owner sells a patented article to [] customer[s], . . . [p]roperty law, rather than patent law, then governs customers' use of such property." Richard H. Stern, *The Unobserved Demise of the Exhaustion Doctrine in U.S. Patent Law: Mallinckrodt v. Medipart*, 15 Eur. Intell. Prop. Rev. 460, 460 (1993). Indeed, this Court has recognized that under the exhaustion doctrine, the purchaser "becomes possessed of an absolute property in such articles." *Keeler v. Standard Folding Bed Co.*, 157 U.S. 659, 666 (1895). This Court has held that once exhaustion applies, the patented article becomes the "private individual property of the purchaser." *Chaffee v. Boston Belting Co.*, 63 U.S. (22 How.) 217, 223 (1859).

This Court's cases dealing with "repair" and "reconstruction" do not hold otherwise. *See, e.g.*, *Am. Cotton-Tie Co. v. Simmons*, 106 U.S. 89 (1882). These cases simply attempt to draw a line between "repair" and

"reconstruction" in situations where the patented article has become worn to a point that ordinary use is no longer possible. *See id.* at 94.

Monsanto incorrectly contends that this Court in *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437 (2007), addressed an issue "similar" to patent exhaustion by "conclud[ing] that identical copies of software must be treated as separate components from the master disk . . . even though the only use of the master disk was to create such copies." Resp'ts' Br. 18. But *Microsoft* has no relevance to the issue here. *Microsoft* addressed whether the master disk or the copies were "components" under 35 U.S.C. § 271(f) of computers assembled abroad. 550 U.S. at 441–42.

This Court should reject Monsanto's invitation to restrict the right to "use" an invention by expanding the right to "make" the invention and preventing standard farming practices, i.e., planting seeds and propagating successive generations. Resp'ts' Br. 23. "[A]s long as agriculture has existed, farmers have assumed the universal right to save, replant, and exchange seed from their harvests." Michael Mascarenhas & Lawrence Busch, *Seeds of Change: Intellectual Property Rights, Genetically Modified Soybeans and Seed Saving in the United States*, 46 Enr. Soc'y for Rural Soc. 122, 122 (2006) (discussing traditional seed-saving practices).

Monsanto seeks to abolish that "universal right" by expanding the patent monopoly, maintaining that Bowman "made" *the invention* because growing soybean seeds "required substantial, and sustained, human effort," including planting "in suitable soil, at the correct depth,

and in the correct manner, at a time suitable for planting." Resp'ts' Br. 23. But these actions constitute the very *uses* intended by Monsanto's patents to obtain the full benefit of the inventions, i.e., glyphosate resistance in the resulting plants and seeds. Exhaustion makes those uses available to those who purchased patented seeds in authorized sales. Thus, exhaustion allows farmers to exercise their "universal right" to save seeds and plant their saved seeds free of any claims of patent infringement.

The Government's attempt to focus on the right to "make" rather than the right to "use" rests in part on Congress's passage of an exception to copyright infringement for computer software called the "essential step defense." U.S. Br. 16–17; *see* 17 U.S.C. § 117(a). But copyright law required that exception because the statute codifies the common-law first-sale doctrine in a limited way that affects the distribution right rather than the reproduction right. *See* 17 U.S.C. § 109(a) (limiting application to the right of distribution under 17 U.S.C. § 106(3)). Unlike the exclusive rights granted by the Patent Act, the Copyright Act confers no exclusive right to "use." *Compare* 35 U.S.C. § 154(a), *with* 17 U.S.C. § 106(1)–(6). In other words, copyright's first-sale doctrine does not bestow rights on a purchaser to use copyrighted works in the same way that the patent-exhaustion doctrine does for purchasers of patented articles.

The Government argues that "Congress has effectively extended copyright exhaustion principles to the creation, under specified circumstances, of subsequent generations of technology." U.S. Br. 16. But Congress actually did something quite different by enacting the essential-step defense for software—it limited the protection afforded

by the Copyright Act to vouchsafe the public's right to *use* software for its ordinary purpose. The common law already did that for patented articles subject to an authorized sale. *See Adams*, 84 U.S. at 455–56.

II. THIS COURT SHOULD REJECT MONSANTO'S ATTEMPT TO RETAIN PATENT RIGHTS TO CONTROL POST-SALE USE AND DISPOSITION OF SEEDS

By mischaracterizing the sale of progeny seeds as restricted, Monsanto attempts to defend the Federal Circuit's conditional-sale doctrine by arguing that this Court's decisions do not establish a "per se rule against enforcing reasonable conditions following a sale" under patent law and that "the Court has made clear that a patentee may commercialize its invention by authorizing certain use rights and not others, even when there has been a sale of the article embodying the invention." Resp'ts' Br. 37–38. But Monsanto misreads this Court's exhaustion decisions. *See* Pet'r's Br. 22–26. As the Government explained, "[T]his Court's decisions make clear that patent exhaustion applies despite explicit restrictions imposed by the patentee, as long as there has been an authorized sale of the patented item." U.S. Br. 30.

Monsanto claims that the distinction between a license and a sale is "incorrectly formalistic." Resp'ts' Br. 35 n.21. But several of this Court's exhaustion cases turn on whether the transaction at issue was a sale or a license. *See, e.g.*, *Univis Lens*, 316 U.S. at 252; *Gen. Elec.*, 272 U.S. at 488–90. If the distinction between a license and a sale were "incorrectly formalistic" as Monsanto suggests, these cases would have been decided differently.

Monsanto misreads *Mitchell v. Hawley*, 83 U.S. (16 Wall.) 544 (1873), to find support for a conditional-sale exception to patent exhaustion. *See* Resp'ts' Br. 40. But the absence of an authorized sale in *Mitchell* determined the outcome. 83 U.S. at 551. Monsanto's arguments to the contrary are wrong. *See* Resp'ts' Br. 39 n.23. In *Mitchell*, this Court emphasized that Bayley, the licensee who purported to "sell" the machines to Mitchell, "was only a licensee and *never had any power to sell* a machine so as to withdraw it indefinitely from the operation of the franchise secured by the patent." 83 U.S. at 551 (emphasis added).

Monsanto similarly misreads *General Talking Pictures Corp. v. Western Electric Co.*, 304 U.S. 175 (1938), concluding that it and *Mitchell* stand for the proposition that "a patentee may limit its licensees' rights to use its invention, and that those restrictions are not *per se* unenforceable merely because the licensee subsequently sells an article embodying that invention to a third party." Resp'ts' Br. 34. Like *Mitchell*, *General Talking Pictures* involved an unauthorized sale. 304 U.S. at 180. That makes both cases distinguishable from the facts here. Moreover, neither case supports Monsanto's argument that a patentee can enforce post-sale conditions through infringement suits.

Monsanto's misreading of this Court's exhaustion decisions to find support for a conditional-sale doctrine parallels the Federal Circuit's approach in *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700 (Fed. Cir. 1992). Like the Federal Circuit in *Mallinckrodt*, Monsanto points to statements in *Mitchell* concerning sales "without any conditions," 83 U.S. at 548, as evidence that this Court's exhaustion decisions permit a patentee to employ patent

law to control use or distribution of patented articles even after an authorized sale. *Mallinckrodt*, 976 F.2d at 707; Resp'ts' Br. 38. But this reading conflicts with the holding in *Mitchell*, which turned on the fact that there was no authorized sale. 83 U.S. at 551.

In any event, Monsanto's position that patent exhaustion does not apply to conditional sales does not extend to the downstream sales at issue here. With its Technology Agreements, Monsanto authorizes farmers to sell the progeny of first-generation seeds to grain elevators in *unrestricted* sales, and grain elevators are authorized to sell those seeds to the public in *unrestricted* sales. JA133a; JA138a; PA8a.

Monsanto argues that the sale of commodity seeds to Bowman was somehow illegal under state laws regulating seed labeling. Resp'ts' Br. 6. Several amici make similar arguments. *See, e.g.*, Wis. Alumni Research Found. (WARF) Br. 29; Pioneer Hi-Bred Int'l Br. 2–3, 10–11. These arguments lack merit. First, those laws were intended to protect seed purchasers, not to restrict their right to buy and use seeds. Second, the commodity seeds at issue here were not packaged and labeled for sale in violation of any state or federal law. A0355–56. Indeed, the record indicates that, while limited to risky plantings, farmers have for generations used commodity seeds for planting. JA153a–54a.

Monsanto misleadingly quotes Bowman as saying "[t]hat's illegal," suggesting that he meant his purchases from grain elevators. Resp'ts' Br. 6. Instead, he simply noted that various laws prohibit grain elevators from packaging and labeling seeds for planting purposes. A0355–56. That did not happen here.

Monsanto argues that "the Court has rendered conditions following a sale unenforceable in only two circumstances: resale price restrictions and tying." Resp'ts' Br. 41. But excluding patent exhaustion from the realm of conditional sales except for those involving resale-price restrictions and tying arrangements would seriously impair its utility since the exhaustion doctrine serves as an important limitation on patent rights. As the district court in *Mallinckrodt* observed, "[T]here is a strong public interest in not stretching the patent laws to authorize restrictions on the use of purchased goods." *Mallinckrodt, Inc. v. Medipart, Inc.*, No. 89-C-4524, 1990 WL 19535, at *7 (N.D. Ill. Feb. 16, 1990), *rev'd*, 976 F.2d 700 (Fed. Cir. 1992). That court also correctly observed that patent exhaustion "rests on a pragmatic judgment that, in general, people both expect and should be able to use the goods they purchase without restraints from merchants and manufacturers" and that "the interest in preventing restraints on use is stronger than the opposing interest in permitting a patent owner to use his monopoly to increase sales of his invention." *Id.* at *8.

Monsanto cites *United States v. Masonite Corp.*, 316 U.S. 265 (1942), to support the assertion that the test for exhaustion is whether "it may fairly be said that the patentee has received his reward for the use of the article." Resp'ts' Br. 44. But Monsanto misplaces its reliance on *Masonite*. There, this Court did not address the amount of the reward but simply noted that whatever form the transaction took, the determinative factor for invoking exhaustion was that the patentee received consideration. 316 U.S. at 278–80. Here, Monsanto received consideration through its Technology Agreements, its sales of first-generation seeds, and royalties from its licensees. In exchange for that reward, farmers received, among

other things, the right to sell progeny seeds to grain elevators without having to impose any restrictions on the elevators' use or resale of those seeds. While Monsanto notes that grain elevators are "an unlikely source of crop seed," Resp'ts' Br. 6 n.6, Monsanto does not dispute that Bowman purchased commodity seeds in authorized, i.e., noninfringing, sales.

III. MONSANTO SHOULD NOT BE PERMITTED TO SUPPRESS A CHEAPER, NONINFRINGING SOURCE OF SEED

Applying patent exhaustion here would prevent another evil, namely, the suppression of cheaper sources of noninfringing seeds and forcing farmers to satisfy their seed requirements with patented seeds, regardless whether they actually want the patented technology. Because Monsanto freely permits farmers to sell progeny seeds to grain elevators without imposing any restrictions on the elevators, the elevators do not segregate Roundup Ready® progeny seeds from seeds lacking the patented trait. Monsanto should concede that before it introduced Roundup Ready® seeds, cheaper seeds lacking the patented trait were available from grain elevators for risky, late-season plantings. As the use of Roundup Ready® seeds became ubiquitous, the percentage of seeds with the patented trait in grain elevators steadily increased. Due to the commingling of seeds in grain elevators, it is now virtually impossible to buy any quantity of seeds from an elevator that does not include seeds with the patented trait. PA33a–34a. If exhaustion does not apply here, Monsanto's near monopoly on first-generation seeds and its practice of allowing commingling will result in a near monopoly on commodity seeds from the grain elevators,

which have long been used for late-season plantings. *See* JA153a–54a.

Farmers will have to go to Monsanto or its licensees for all of their seed requirements, paying Monsanto's premium price for the patented technology even for late-season plantings, for fear of infringement if they go to grain elevators. The most likely consequence is that late-season plantings will no longer be economically justifiable, thereby depriving farmers of an age-old option to increase revenue. That is an unwarranted extension of Monsanto's patent monopoly that harms the public. In a different factual context, this Court condemned a patentee's attempt to force purchasers to buy a patented product by suppressing a cheaper, noninfringing product. *See United States v. United States Gypsum Co.*, 333 U.S. 364, 397 (1948). As in *Gypsum*, this Court should condemn Monsanto's effort to suppress a cheaper, noninfringing product.

IV. THE PVPA AND CASES INTERPRETING IT DO NOT SUPPORT MONSANTO

Nothing in the Plant Variety Protection Act (PVPA), 7 U.S.C. §§ 2321 *et seq.*, or *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc.*, 534 U.S. 124 (2001), alters the way that patent exhaustion applies to seeds. Exhaustion was not at issue in *J.E.M.* and would not change the result in *J.E.M.* There, this Court compared the language of the Patent Act and the PVPA, but did not address judicially created doctrines such as patent exhaustion.

Also, applying patent exhaustion to authorized seed sales does not contravene congressional intent as reflected

in the Patent Act and the PVPA. In 1952, Congress codified in the Patent Act the common law on patent infringement. *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 530 n.10 (1972); *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 350 n.2 (1961) (Black, J., concurring). In contrast, after *Bobbs-Merrill Co. v. Straus*, 210 U.S. 339 (1908), Congress codified a narrowed first-sale doctrine in the Copyright Act. *See* 17 U.S.C. § 109(b). Congress has not similarly limited the common-law patent-exhaustion doctrine—either by codification in 1952 or through any subsequent amendment.

The PVPA contains statutory exemptions, and its infringement provision "more resembles copyright law than patent law." S. Rep. No. 91-1138, at 11 (1970). Like the Copyright Act, where Congress codified a narrower version of the common-law first-sale doctrine, Congress enacted and amended the PVPA's saved-seed exemption to both endorse and confine historical farming practices. *See* Mascarenhas & Busch, *supra*, at 122, (discussing traditional seed saving practices and stating that "as long as agriculture has existed, farmers have assumed the universal right to save, replant, and exchange seed from their harvests"). Monsanto identifies no evidence that Congress intended to limit or derogate the common-law patent-exhaustion doctrine for patented seeds.

To be sure, this Court has already held that Congress did not, by enacting the PVPA, disturb the scope of patent rights for sexually reproduced plants. *J.E.M.*, 534 U.S. at 145 (holding that "neither the [Plant Patent Act] nor the PVPA limits the scope of [35 U.S.C.] § 101's coverage"). The scope of the PVPA's statutory saved-seed exemption therefore has no bearing on the scope of the common-law patent-exhaustion doctrine as applied to patented seeds.

This Court should therefore decline Monsanto's request for a judicial carve-out from the patent-exhaustion doctrine for seeds and other self-replicating technologies. This Court normally looks to Congress to balance competing interests like these. *See Sony Corp. of Am. v. Universal City Studios*, 464 U.S. 417, 431 (1984); *Boston Store of Chi. v. Am. Graphophone Co.*, 246 U.S. 8, 25–26 (1918). The Government and several amici make this same point. U.S. Br. 13; *see, e.g.*, Am. Intellectual Prop. Law Ass'n Br. 14.

V. MONSANTO AND ITS AMICI OVERSTATE THE ECONOMIC IMPACT OF PATENT EXHAUSTION FOR SELF-REPLICATING PRODUCTS

Monsanto and its amici do not dispute that the mixed character of commodity seeds makes them largely unsuitable for planting except in risky situations. Nevertheless, they wish to preclude this age-old practice. But Monsanto and its amici fail to explain how commodity seeds or their progeny could possibly be sold in competition with first-generation seeds. Indeed, most agree that commodity seeds cannot be sold in competition with first-generation seeds due to labeling and certification requirements. *See, e.g.*, CHS Br. 4–8; Am. Soybean Ass'n Br. 31–33. Accordingly, a ruling permitting the use of commodity seeds for planting will have little, if any, impact on Monsanto's business given the relatively low risk of competition Monsanto faces from commodity seeds.

Monsanto argues that this Court's approval of exhaustion here would lead to "inefficient, pretextual transactions," such as a farmer selling seeds to a grain elevator and immediately buying them back. Resp'ts' Br. 48–49. Assuming that a farmer could feasibly buy back his

own seeds from a grain elevator, Monsanto ignores that it could prevent that conduct contractually. And even if the contract lacked specific prohibitions, Monsanto could recover for breach of the covenant of good faith and fair dealing because "[e]very contract imposes upon each party a duty of good faith and fair dealing in its performance." Restatement (Second) of Contracts § 205 (1981).

Regarding the impact that a ruling in Bowman's favor might have beyond the use of commodity seeds for planting, Monsanto and its amici exaggerate the consequences. Monsanto asserts that extending patent exhaustion to the progeny of self-replicating products would undermine the incentive to innovate, alleging that patentees "would receive essentially no protection against the copying of any commercialized invention." Resp'ts' Br. 31. Some amici, such as the Government, the Wisconsin Alumni Research Foundation, and CropLife America, make similar assertions. U.S. Br. 18; WARF Br. 10–11; CropLife Am. Br. 23–25. They identify various technologies that would allegedly suffer harm if patent exhaustion applied to the progeny of certain self-replicating products, including 3-D printers, genetically modified bacteria, man-made cell lines, and recombinant plasmids, e.g., DNA vectors. Resp'ts' Br. 31–32; U.S. Br. 18; WARF Br. 10–11.

But the 3-D printers that Monsanto mentions only make components for a kit and do not actually self replicate. *See* Resp'ts' Br. 32 n.17; *see also* RepRap, http://www.reprap.org/wiki/Main_Page (last visited Feb. 8, 2013). Because someone would have to assemble those components to construct a machine, that assembly would presumably constitute direct infringement of a patent

claim covering the machine. *See* 35 U.S.C. § 271(a). Thus, Monsanto's 3-D printers provide an inapt illustration of a technology supposedly at risk if patent exhaustion applied to the progeny of self-replicating products.

Insofar as Bowman has ascertained, truly self-replicating technologies break down into two general categories based on distribution channels: products whose progeny (1) pass directly from producers to consumers or end users or (2) pass indirectly from producers through one or more intermediaries to consumers or end users.

Genetically modified laboratory animals, stem cells, and bacteria exemplify products in the first category.[1] Genetically modified crops, such as soybeans and corn,

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1. *See, e.g.*, *Testing Methods Using OncoMouse® Transgenic Models of Cancer*, DuPont TechnologyBank™, http://dupont.t2h.yet2.com/t2h/page/techpak?id=26128 (last visited Feb. 8, 2013); *Frequently Asked Questions*, DuPont TechnologyBank™, http://dupont.t2h.yet2.com/t2h/page/faq#onco (last visited Feb. 8, 2013); Testing Method Using Transgenic Mice Expressing an Oncogene, U.S. Patent No. 5,925,803 (filed Sept. 19, 1991); *Intellectual Prop.*, StemCells, Inc., http://www.stemcellsinc.com/Science/Intellectual-Property.htm (last visited Feb. 8, 2013) (identifying numerous stem-cell-related patents and technologies); *Licensees*, StemCells, Inc., http://www.stemcellsinc.com/Science/Licensees.htm (last visited Feb. 8, 2013) (identifying licensees); Materials and Methods for Efficient Lactic Acid Prod., U.S. Patent No. 7,629,162 (filed Aug. 8, 2006); SEC, *Amendment and Restatement of the License Agreement Regarding Modified E. Coli Tech.* (2008), http://www.sec.gov/Archives/edgar/data/1485026/000095012311054952/b86680exv10w8.htm (agreement allowing the making and using of recombinant bacteria and the selling of lactic acid produced by the bacteria).

exemplify products in the second category.[2] As another example, genetically modified plasmids—such as live-attenuated self-replicating vaccines, e.g., FluMist®—sold through distributors to end users fall into the second category.[3]

For products in the first category, whose progeny pass directly to consumers or end users, patentees could provide products to them and simply license them to make and use—but not sell—progeny. Because the users of these technologies lack the power to sell, patent exhaustion would not apply. *See, e.g.*, *Mitchell*, 83 U.S. at 550–51. If a user-licensee violated a license agreement by selling progeny, a patentee-licensor could sue for patent infringement as well as breach of contract. *See Quanta*, 553 U.S. at 637 n.7 (noting the availability of contract remedies even where patent exhaustion applies).

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2. *See, e.g.*, Dow AgroSciences, *Herculex® Insect Protection Technology* 9 (2007), http://msdssearch.dow.com/PublishedLiteratureDAS/dh_00c2/0901b803800c2908.pdf?filepath=herculex/pdfs/noreg/010-16310.pdf&fromPage=GetDoc (explaining that genetically modified corn "must be fed on-farm, used domestically, or delivered to elevators or other" grain handlers).

3. *See NanoLight™ Technology Licensing*, http://www.nanolight.com/licensing_luciferases_gaussia_luciferins_fluorescent_proteins.php (last visited Feb. 8, 2013) (listing patents and "authorized distributors" for patented recombinant luminescence plasmid technology); FluMist®, http://www.flumist.com/ (last visited Feb. 8, 2013); *Online Ordering and Reimbursement Info*, FluMist®, http://hcp.flumist.com/influenza-vaccine-cost (last visited Feb. 8, 2013) (listing distributors); Methods of Producing Influenza Vaccine Compositions, U.S. Patent No. 7,262,045 (filed Feb. 25, 2004).

For products in the second category, whose progeny pass indirectly to consumers or end users through one or more intermediaries, patentees could employ a distribution plan like the one at issue in *General Electric*. *See* 272 U.S. at 479. That plan involved the distribution through GE's agents of light bulbs covered by GE's patents. *Id.* at 480–83. In particular, GE supplied light bulbs on consignment to wholesalers ("B agents") and retailers ("A agents"), but the light bulbs remained GE's property until sold to consumers. *Id.* at 481–83. B agents could supply light bulbs to A agents, deliver them to others who had contracts with GE, or sell them to consumers. *Id.* at 482. A agents could sell light bulbs to consumers or deliver them to others who had contracts with GE. *Id.* at 483. GE's agents received commissions for sales. *Id.* This Court observed that GE's distribution plan was "devised for the purpose of enabling the company to deal directly with consumers and purchasers." *Id.* Noting the "distinction in law and fact between an agency and a sale," this Court sustained the validity of GE's distribution plan over the government's antitrust challenge. *Id.* at 485–94.

For Roundup Ready® soybeans, Monsanto could structure its agreements with farmers to make them grower-agents with licenses to (1) sell progeny seeds to end users who agreed not to plant, or (2) deliver progeny seeds to others who had contracts with Monsanto, e.g., authorized grain elevators. And Monsanto could structure its agreements with grain elevators to make them distributor-agents with licenses to sell progeny seeds to end users who agreed not to plant.

The above example based on *General Electric* is just one where contract law may be used to protect investments

in self-replicating technologies. In this example, patent rights are retained until a sale to the end user or consumer, with Monsanto assuming the risks associated with farming until that sale occurs. Monsanto could make other contractual arrangements with farmers and grain elevators, e.g., by requiring farmers to sell only to authorized grain elevators who agreed to secure promises from seed purchasers not to plant them. Monsanto could enforce contractual restrictions and obtain remedies that approach those provided by patent law.

Monsanto complains that contract remedies are inadequate, in part because lost-profit damages must be established "with reasonable certainty." Resp'ts' Br. 53. As in contract law, damages for patent infringement must be established with reasonable certainty. *See, e.g., Lam, Inc. v. Johns-Manville Corp.*, 718 F.2d 1056, 1065 (Fed. Cir. 1983). If Monsanto cannot recover lost profits under contract law, it will fare no better under patent law.

CONCLUSION

Monsanto's request for expanded patent rights at the expense of America's farmers should be rejected. Farmers who purchase patented seeds and assume all risks associated with the business of farming should obtain full rights of ownership in those seeds and be able to use those seeds "in the ordinary pursuits of life." The judgment should be reversed.

Respectfully submitted,

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SUPPLEMENTAL BRIEF

RECORD AND BRIEFS

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IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY and
MONSANTO TECHNOLOGY LLC,

Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

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QUESTION PRESENTED

Whether the Federal Circuit erred by (1) refusing to find patent exhaustion in patented seeds sold in an authorized sale and by (2) creating an exception to the doctrine of patent exhaustion for self-replicating technologies?

I. By Affirming the District Court's Judgment, the Court of Appeals Necessarily Relied on the Conditional Sale Doctrine as Articulated in Its Prior Seed Cases, *McFarling* and *Scruggs*

The Government concludes that "[t]he decision below did not rest in any part on the presence (or absence) of post-sale restrictions imposed by respondent" and that "[t]his case therefore provides no occasion for the Court to consider the continuing validity of the Federal Circuit's conditional-sale approach to exhaustion after *Quanta*." U.S. Amicus Br. 11-12.[1] The Government is incorrect on both accounts. The judgment affirmed by the Federal Circuit was based on Bowman's allegedly "unlicensed use" of the commodity soybeans he purchased on the open market from a grain elevator, not the sale or purported "making" of progeny seeds. Pet. App. at 41a-42a.

As the district court explained, Monsanto "provided an expert assessment of * * * an amount of damages it is

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1. Where "conditional-sale approach" refers to a rule articulated by the Federal Circuit in *Mallinckrodt, Inc.* v. *Medipart, Inc.*, 976 F.2d 700 (Fed. Cir. 1992) and "*Quanta*" refers to this Court's most recent articulation of the law pertaining to patent exhaustion, *Quanta Computer, Inc.* v. *LG Elecs., Inc.*, 553 U.S. 617 (2008).

entitled to receive for the second season crops *planted* by Bowman for which he *used*, without license, soybeans which carried the Roundup Ready® trait." *Id.* at 42a (emphasis added). In rejecting Bowman's exhaustion defense, the district court reasoned that "[t]he distinction found by the Federal Circuit in [*Monsanto Co.* v.] *McFarling*[, 302 F.3d 1291 (Fed. Cir. 2002)], and which exists here as well, is that the Monsanto licenses (and the agreements its licensees required from farmers) for Roundup Ready® soybeans specifically excluded saving seed or otherwise providing anyone progeny soybeans for purposes of planting." *Id.* at 41a. Relying on this distinction, the district court held that "*[n]o unconditional sale of the Roundup Ready® trait occurred* because the farmers could not convey to the grain dealers what they did not possess themselves." *Ibid.* (emphasis added).

Contrary to the Government's position, the Federal Circuit necessarily agreed with the district court's reasoning that a conditional sale precluded application of Bowman's exhaustion defense. This is so because the Federal Circuit refused to find Monsanto's patent rights exhausted with respect to the seeds Bowman purchased from the grain elevator. Pet. App. 14a (explaining "[t]he doctrine of patent exhaustion did not bar the infringement claims in *McFarling* or [*Monsanto Co.* v.] *Scruggs*[, 459 F.3d 1328 (Fed. Cir. 2006)]" and "[s]imilarly, here, patent exhaustion does not bar an infringement action").

Had the Federal Circuit concluded (as it should have) that Monsanto's patent rights to seeds sold by the grain elevator were exhausted, it would have been required to vacate the judgment and remand for review of the damages award based on the number of infringing units

Bowman allegedly "made" by planting. Instead, the Federal Circuit affirmed the judgment, which was based on acres *planted*. Pet. App. at 42a. As any Indiana farmer will confirm (especially one living through the current drought), acres of commodity soybeans planted as a risky second crop late in the growing season may not produce *any* progeny. Accordingly, the judgment cannot be sustained by the Federal Circuit's alternative reasoning (i.e., "[e]ven if Monsanto's patent rights in the commodity seeds are exhausted, such a conclusion would be of no consequence because once a grower, like Bowman, plants the commodity seeds * * * the grower has created a newly infringing article" (Pet. App. 14a)), because the evidence required to sustain a judgment based on acres *planted* is not the same evidence required to sustain a judgment based on the quantity of seeds allegedly *made*. The only rationale articulated by the Federal Circuit sufficient to affirm the judgment is the conditional sale rational, and as the Government concedes, that rationale "does conflict with this Court's patent-exhaustion decisions." U.S. Amicus Br. 6.

Because the judgment is based on the conditional sale rational, this case is an appropriate vehicle through which the Court may resolve uncertainty created by the Federal Circuit's continued reliance on the *Mallinckrodt* line of cases. The Government attempts to minimize the tension created by this conflicting body of Federal Circuit law, arguing that "[i]t is not clear * * * whether the Federal Circuit will continue to adhere to the *Mallinckrodt* line of cases after *Quanta*." *Id.* at 11. But the Federal Circuit's *en banc* decision in *Princo Corp.* v. *Int'l Trade Comm'n*, 616 F.3d 1318 (Fed. Cir. 2010), does just that, citing *Mallinckrodt* and *B. Braun Medical, Inc.* v. *Abbott*

Laboratories, 124 F.3d 1419 (Fed. Cir. 1997) for the proposition that "[a]s a general matter, the *unconditional sale* of a patented device exhausts the patentee's right to control the purchaser's use of the device" and "[t]hat [the] 'exhaustion' doctrine *does not apply*, however, to a conditional sale or license." *Princo*, 616 F.3d at 1328 (emphasis added). If the Federal Circuit intended to take the position that *Quanta* overruled *Mallinckrodt sub silentio*, *see, e.g.*, *Static Control Components, Inc.* v. *Lexmark Int'l, Inc.*, 615 F. Supp. 2d 575, 585 (E.D. Ky. 2009), a majority of Federal Circuit judges in *Princo* would not have made such a clear endorsement of the conditional sale approach to exhaustion. Uncertainty concerning the Federal Circuit's conditional sale doctrine abounds following *Quanta*. A need exists for this Court to clarify whether *Mallinckrodt* is good law. This case presents an opportunity for important clarification.

II. The Government's Position that Use for Planting is also "Making" is Unsupported by the Statute and Inconsistent with this Court's Precedent Defining "Repair" and "Reconstruction"

The Government concedes that "planting soybean seed in order to produce a new crop is naturally described as 'using' the seed that was planted." U.S. Amicus Br. 14. Bowman took ownership of the commodity soybean seeds in an authorized sale. Pet. App. 8a (explaining that "the only permissible reading of the Technology Agreement * * * is that it authorizes growers to sell seed to grain elevators as a commodity"). Thus, Bowman's *use* of commodity soybean seeds for planting is beyond the reach of Monsanto's patent monopoly—any attempt by Monsanto to retain rights under the patent to exclude

use is inconsistent with the doctrine of patent exhaustion as articulated by this Court for over 150 years. This is because an authorized sale "carries with it the right to the use of that machine *to the full extent to which it can be used.*" *Adams* v. *Burke*, 84 U.S. (17 Wall.) 453, 455 (1873) (emphasis added); *see also United States* v. *Univis Lens Co.*, 316 U.S. 241, 250 (1942).

The Government does not appear to dispute that Monsanto's patent rights were exhausted in the commodity seeds sold to Bowman. U.S. Amicus Br. 18. Notwithstanding the fact of patent exhaustion, the Government asserts that "infringement may still occur if the purchaser 'uses' the sold article to 'make' a newly infringing one." U.S. Amicus Br. 14. The Government's "use-to-make" argument finds no support in the law and it eliminates the doctrine of patent exhaustion for self-replicating technologies because, according to this new concept, the patentee retains rights under the patent to exclude certain kinds of uses, exacting an abhorrent servitude on these items of personal property as they meander through streams of commerce.

As support for this novel "use-to-make" argument, the Government cites cases from this Court dealing with "repair" and "reconstruction." U.S. Amicus Br. 13-14 (citing *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 365 U.S. 336 (1961) ("*Aro I*"); *American Cotton-Tie Co.* v. *Simmons*, 106 U.S. 89 (1882); and *Wilson* v. *Simpson*, 50 U.S. (9 How.) 109 (1850)). These cases, however, are not germane to the use of patented seeds. In the context of patented seeds, use as contemplated by all parties to the first sale (throughout the entire useful life of the seed) may simply *result in* the creation of a new item. In the "repair"

and "reconstruction" cases relied on by the Government, infringement was found only where the article had become worn or destroyed; where use by the owner in a manner contemplated by the parties to the first sale was no longer possible.

In both *Wilson* and *Aro I*, the defendants made permissible "repair" to an item, replacing parts that wore out before the useful life of the product ended. *Wilson*, 50 U.S. at 124-26 (finding that replacing cutting knives on a machine used for planning, tonguing, and grooving was permissible "repair"); *Aro I*, 365 U.S. at 346 (finding that replaced fabric on a convertible top for an automobile was permissible "repair"). The line separating permissible "repair" from impermissible "reconstruction" was drawn in *Wilson*, where this Court explained that "[w]hen the wearing or injury is partial, then repair is restoration, and not reconstruction." 50 U.S. at 123.

In *American Cotton-Tie*, the defendants impermissibly reconstructed patented cotton baling ties made from an iron buckle and a band, where the bands had been voluntarily severed at the cotton mill and sold as scrap iron. 106 U.S. at 91-94. Defendants infringed because they took the severed bands, refurbished them by riveting them back together, and combined them with a buckle to make an infringing cotton tie that included all elements of the patent claim. The Court reasoned:

> [w]hat the defendants did in piecing together the pieces of the old band was not a repair of the band or the tie, in any proper sense. The band was voluntarily severed by the consumer at the cotton-mill because the tie had performed

> its function of confining the bale of cotton in its transit from the plantation or the press to the mill. *Its capacity for use as a tie was voluntarily destroyed.*

Id. at 94 (emphasis added).

Bowman's use of commodity soybean seed for planting has nothing in common with "reconstruction." The seed was not worn out and substantially replaced; it was simply used in the same condition it was in at the point of sale.

Monsanto's attempt to prohibit use of commodity seed for planting is inconsistent with the policy underlying this Court's case law dealing with repair and reconstruction. "This Court's decisions specifically dealing with whether the replacement of an unpatented part, in a patented combination, that has worn out, been broken or otherwise spent * * * have steadfastly refused to extend the patent monopoly beyond the terms of the grant." *Aro I*, 365 U.S. at 342 (citing *Wilson*, 50 U.S. at 109). "The established policy in this Nation for more than a century as been that when an article described in a patent is sold and 'passes to the hands of the purchaser, it is no longer within the limits of the monopoly. It passes outside of it, and is no longer under the protection of the act of congress ... Contracts in relation to it are regulated by the laws of the State, and are subject to state jurisdiction.'" *Id.* at 359 (Black, J., concurring) (quoting *Bloomer* v. *McQuewan*, 55 U.S. (14 How.) 539, 549-50 (1853)). Thus, even if one accepts as true the Government's position that use of commodity soybeans for planting is also "making" (U.S. Amicus Br. 14), Monsanto cannot use patent law to prohibit this activity because the seed "is no longer under the protection of the [patent] act." *Ibid.*

The Government advances an expansive definition of "make" in order to capture Bowman's use of commodity soybean seeds for planting. U.S. Amicus Br. 15. Citing *Webster's Third New International Dictionary* 1363 (1993), the Government concludes that the verb "make" as used in the Patent Act should mean "to bring about," "to cause to happen," or "to cause to exist." U.S. Amicus Br. 15. The Government's proffered definition for "make," however, is inconsistent with use of that word in 35 U.S.C. § 271(a).

The Patent Act does not define the term "make," but it does separate direct infringement in § 271(a) from active inducement and contributory infringement in §§ 271(b) and (c). Both forms of "indirect infringement," §§ 271(b) and (c), hold liable those who contribute to or encourage the direct infringement of others, either by supplying components with knowledge that the same will be used in an infringing combination, or by inducing the direct infringement of another with knowledge that the induced acts constitute patent infringement. *Global-Tech Appliances, Inc.* v. *SEB S.A.*, --- U.S. ---, 131 S. Ct. 2060, 2066 (2011). The Government's expansive definition of "make" would encompass *both* forms of indirect infringement, as each form of indirect infringement has a causal connection to the creation of an infringing combination.

The Government's expansive dictionary definition for "make" is too broad when considered in proper statutory context. If it was adopted, there would be no such thing as indirect infringement; anyone who has "caused to exist" the infringing combination would be liable as a direct infringer. As this Court recently explained, "[a] word in a statute may or may not extend to the outer limits of

its definitional possibilities. Interpretation of a word or phrase depends upon reading the whole statutory text, considering the purpose and context of the statute." *Dolan* v. *United States Postal Serv.*, 546 U.S. 481, 486 (2006) (applying a more narrow reading of the phrase "negligent transmission" based on use of the phrase in the context of the statute). Moreover, in the context of interpreting the Patent Act, this Court has frequently refused the position of a litigant who would propose an expansive interpretation of undefined words in the Act.

> It follows that we should not expand patent rights by overruling or modifying our prior cases construing the patent statutes, unless the argument for expansion of privilege is based on more than mere inference from ambiguous statutory language. We would require a clear and certain signal from Congress before approving the position of a litigant who, as respondent here, argues that the beachhead of privilege is wider, and the area of public use narrower, than courts had previously thought.

Deepsouth Packing Co., Inc. v. *Laitram Corp.*, 406 U.S. 518, 531 (1972).

In cases where courts have construed "making" in the context of 35 U.S.C. § 154 and "makes" in the context of § 271, those terms have been strictly construed to pertain to the act of creating "an operable assembly of the whole and not the manufacture of its parts." *Id.* at 528; *see also Radio Corp. of America* v. *Andrea*, 79 F.2d 626 (2d Cir. 1935).

Both *Deepsouth* and *Andrea* are instructive on how courts have construed "makes" and "making" because they involve situations where a party was accused of direct infringement by manufacturing and shipping unassembled parts of a patented article. These cases reject the notion that such activity can be fairly considered "making" the invention because "we cannot say that the patented combination was complete *until physical connection is established.*" *Andrea*, 79 F.2d at 628 (emphasis added); *see also Deepsouth*, 406 U.S. at 529.

In the case of seeds, they will self-replicate or "sprout" unless stored in a controlled manner preventing this natural activity. Humans can (and most often do) intervene in the process of self-replication. For example, in this case, Bowman planted Roundup Ready® seeds and treated them with glyphosate. This activity led in part to the creation of new soybeans having the patented Roundup Ready® trait. But it was the planted soybean, not Bowman, that "physically connected" all elements of the claimed invention into an "operable whole."

For example, claim 103 of Monsanto's '247E Patent is drawn to a "recombinant, double-stranded DNA molecule" with various features including "a promoter," "a structural DNA sequence," as well as other elements of a DNA molecule. Pet. App. at 4a-5a. Bowman did not assemble or "physically connect" these elements into an "operable whole," the seed did that on its own. Similarly, claim 116 is a glyphosate-tolerant plant cell comprising a DNA sequence. Bowman did not form the plant cell with the claimed DNA sequence, the seed formed these elements and "physically connected" these into an operable whole.

III. A Finding for Petitioner in this Case Would be Consistent with this Court's Cases Under the PVPA

The Government argues that this Court's decision in *J.E.M. AG Supply, Inc.* v. *Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124 (2001) "reinforces the conclusion that the term 'make' encompasses the deliberate creation of newly infringing articles by planting patented seed." U.S. Amicus Br. 16. Contrary to the Government's characterization of *J.E.M.*, that decision says nothing about the meaning of the word "make" in the context of the Patent Act. Rather, the Government apparently cites *J.E.M.* for the same reasons that Monsanto did in its opposition brief (Br. in Opp. 15), i.e., a statement made in dicta that "there are no exemptions for research or saving seed under a utility patent." 534 U.S. at 143. Both the Government and Monsanto quote this language from *J.E.M.*, arguing that the Plant Variety Protection Act ("PVPA") has specific exemptions for saving seed and research, and that because there are no such exemptions in the Patent Act, there must be no right to save patented seeds grown from seeds purchased in an authorized sale and no right to conduct research on patented seed purchased in an authorized sale. As for the ability to conduct *research*[2] on seeds purchased in an authorized sale, the Government apparently does not read the Patent Act as requiring an exemption for research where patented seed was purchased in an authorized sale. U.S. Amicus Br. 18 (asserting that "[t]he authorized sale of first-generation seed exhausts the patentee's right to control use and

2. Unlike Monsanto's brief, the Government's brief omits the word "research" from the quoted passage in *J.E.M.* U.S. Amicus Br. 16.

disposition of that seed."). Nothing in *J.E.M.* indicates exhaustion should not apply to patented seeds just as it does to any other patented article.

The petition should be granted.

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v.

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ON WRIT OF CERTIORARI
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QUESTION PRESENTED

Whether the authorized sale of one generation of a patented plant seed exhausts a patentee's right to control subsequent generations of that seed.

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In the Supreme Court of the United States

No. 11-796

VERNON HUGH BOWMAN, PETITIONER

v.

MONSANTO COMPANY, ET AL.

ON WRIT OF CERTIORARI
TO THE UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

BRIEF FOR THE UNITED STATES AS AMICUS CURIAE SUPPORTING AFFIRMANCE

INTEREST OF THE UNITED STATES

This case presents the question whether the authorized sale of one generation of a patented plant seed exhausts a patentee's right to control subsequent generations of that seed. The United States Patent and Trademark Office, which is responsible for issuing patents and advising the President on issues of patent policy, 35 U.S.C. 2(a)(1) and (b)(8), has a substantial interest in the resolution of that question. At the invitation of the Court, the United States filed a brief as amicus curiae at the petition stage of this case.

STATEMENT

1. Respondent Monsanto manufactures the herbicide Roundup®. The active ingredient in Roundup is glyphosate, which kills plants by inhibiting the activity of an enzyme necessary for growth. Because Roundup would

otherwise affect crops and weeds alike, respondent developed a genetic sequence that, when inserted into the germplasm of certain seeds (including soybean seeds), results in an engineered seed and crop plant that is resistant to glyphosate. Pet. App. 2a-3a, 20a.

A grower using seed containing that genetic sequence can spray Roundup (or another glyphosate-based herbicide) on his crops without harming them. Seed containing that genetic modification is marketed as Roundup Ready® seed. This case involves two patents issued to respondent that cover different aspects of the biotechnology that comprises the Roundup Ready trait. Pet. App. 3a-6a, 20a-21a.[1]

Respondent sells Roundup Ready soybean seed under its own brands. It also licenses the technology to third-party seed companies, which incorporate the genetic trait into their own soybean seed varieties. The licensed seed companies then sell the Roundup Ready soybeans to growers for planting. The herbicide-resistant trait is carried forward into successive generations of soybeans produced from the genetically altered seed, and the harvested commodity is virtually identical to the planted soybean seed. For that reason, respondent authorizes the licensed seed companies to sell only to growers who are willing to enter into a licensing agreement, often referred to as a "Technology Agreement." Pet. App. 6a-7a, 21a.

By signing a Technology Agreement, a purchasing grower agrees

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[1] The patents at issue, U.S. Patent Nos. 5,352,605 and RE39,247E, are described at Pet. App. 3a-6a and reproduced at Supp. J.A. 1-21.

> (1) to use the seed containing Monsanto gene technologies for planting a commercial crop only in a single season;
>
> (2) to not supply any of this seed to any other person or entity for planting;
>
> (3) to not save any crop produced from this seed for replanting, or supply saved seed to anyone for replanting; and
>
> (4) to not use this seed or provide it to anyone for crop breeding, research, generation of herbicide registration data, or seed production.

Pet. App. 7a (citation and internal quotation marks omitted); J.A. 27a, 40a-43a. Growers are authorized to use or sell the crop produced from the purchased seed for most purposes other than planting. For example, respondent authorizes growers to sell the harvested crop (*i.e.*, the second-generation soybean) to grain elevators as a commodity, and it does not require growers to place any restrictions on the grain elevators' subsequent sale of that seed. Pet. App. 7a-8a.

2. Petitioner, a farmer in Indiana, purchased Roundup Ready soybean seed from one of respondent's licensed seed companies, and he signed a Technology Agreement that included the conditions set forth above. From 1999 through 2007, petitioner planted those seeds as his first soybean crop of the season. Consistent with the Technology Agreement, he did not save the harvested crop for replanting but instead sold it to a local grain elevator. Pet. App. 8a-9a, 21a-22a.

Petitioner also purchased "commodity seed" from a grain elevator and planted a second soybean crop later in the growing season. Commodity seed consists of a mixture of undifferentiated seed from the previous

year's harvest, and is less expensive than Roundup Ready seed. Although commodity seed may include some conventional soybean varieties, in 2007, nearly 94 percent of Indiana's acres of soybeans were used to produce herbicide-resistant crops. When petitioner applied a glyphosate-based herbicide to his fields, he confirmed that many of the second-crop plants were glyphosate-resistant. Thus, from 1999 through 2007, petitioner planted Roundup Ready soybean seed purchased from one of respondent's licensed seed companies for his first-crop planting and sold the second-generation seed to a grain elevator; for his second crop, he planted commodity seed purchased from a grain elevator (as well as seed saved from the previous year's second crop), which included soybeans containing the Roundup Ready trait. Pet. App. 7a-9a, 22a-23a.

3. Respondent brought suit in the federal district court, alleging that petitioner had infringed two of its patents by "making, using, offering for sale, selling, or importing into the United States Roundup Ready® soybean seed embodying the patented invention without authorization." J.A. 15a ¶ 22; see J.A. 17a ¶ 29. Petitioner raised patent exhaustion as a defense to infringement, arguing that respondent's failure to restrict sale of the second-generation seed rendered its patents exhausted with respect to any subsequent use of that seed. Pet. App. 24a. The district court granted summary judgment in favor of respondent and entered judgment in the amount of $84,456.30. *Id.* at 31a-43a, 52a.

4. The court of appeals affirmed. Pet. App. 1a-18a. The court observed that it had previously "dealt with unauthorized planting of second-generation seeds" in *Monsanto Co.* v. *McFarling*, 302 F.3d 1291 (Fed. Cir.

2002), cert. denied, 537 U.S. 1232 (2003), and *Monsanto Co.* v. *Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006), cert. denied, 549 U.S. 1342 (2007). Pet. App. 12a. The court explained that, in both *McFarling* and *Scruggs*, the Federal Circuit had rejected a patent-exhaustion defense asserted by growers who had saved Roundup Ready soybean seeds from the first harvest and had replanted them the next season in violation of a Technology Agreement. *Id.* at 12a-13a.

The court of appeals held that, "[s]imilarly, here, patent exhaustion does not bar an infringement action." Pet. App. 14a. The court stated that, "[e]ven if [respondent's] patent rights in the commodity seeds are exhausted, such a conclusion would be of no consequence because once a grower, like [petitioner], plants the commodity seeds containing [respondent's] Roundup Ready® technology and the next generation of seed develops, the grower has created a newly infringing article." *Ibid.* "The right to use," the court explained, "do[es] not include the right to construct an essentially new article on the template of the original, for the right to make the article remains with the patentee." *Ibid.* (quoting *Jazz Photo Corp.* v. *International Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001), cert. denied, 536 U.S. 950 (2002)) (brackets in original). The court observed that "[a]pplying the first sale doctrine to subsequent generations of self-replicating technology would eviscerate the rights of the patent holder." *Ibid.* (quoting *Scruggs*, 459 F.3d at 1336).

The court of appeals also rejected, as unsupported by the record, petitioner's suggestion that replanting commodity seed to create new seed is the "only reasonable and intended use" of the commodity seed. Pet. App. 14a (quoting *Quanta Computer, Inc.* v. *LG Elecs., Inc.*, 553

U.S. 617, 631 (2008)). The court explained that "there are various uses for commodity seeds, including use as feed." *Ibid.* The court concluded that, although petitioner and other farmers "may have the right to use commodity seeds as feed, or for any other conceivable use, they cannot 'replicate' [respondent's] patented technology by planting it in the ground to create newly infringing genetic material, seeds, and plants." *Ibid.*

SUMMARY OF ARGUMENT

A. Although an authorized sale of a patented article exhausts the patent holder's rights with respect to that article, one who purchases a patented article remains liable for infringement if, without the patentee's authorization, he "construct[s] an essentially new article on the template of the original." *Jazz Photo Corp.* v. *International Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001), cert. denied, 536 U.S. 950 (2002). Under the established principles that define the scope and limits of the exhaustion doctrine, petitioner was properly held liable for patent infringement, since he "ma[d]e" new patented articles (the progeny seeds) without respondent's authorization.

B. Related federal legislation reinforces that conclusion. Under petitioner's theory, holders of Plant Variety Protection Act certificates would have greater rights of exclusion than owners of utility patents on plants, notwithstanding this Court's recognition that the reverse is true. See *J.E.M. AG Supply, Inc.* v. *Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 143 (2001). And while Congress has enacted protections against copyright infringement liability for the copying of software under specified circumstances, it has not adopted any similar protections for persons who reproduce patented plants, notwithstanding abundant case law indicating that such

reproduction is infringing unless authorized by the patentee. Congress, and not the courts, should determine whether established patent rules need to be modified in their application to patented plants.

C. Petitioner's remaining arguments are unpersuasive. None of them calls into question the court of appeals' conclusions that (a) an authorized sale of a patented article does not confer any right to make new patented articles, and (b) petitioner made new patented articles when he planted the commodity seeds and harvested subsequent-generation seeds that contained the Roundup Ready trait. In particular, this Court's decision in *Quanta Computer, Inc.* v. *LG Electronics, Inc.*, 553 U.S. 617 (2008), does not support petitioner's position. The Court in *Quanta* clarified and reaffirmed existing patent-exhaustion doctrine, and it made clear that exhaustion principles apply to method claims. The Court did not suggest, however, that exhaustion principles can immunize the unauthorized creation of new patented articles, particularly where (as here) the lawfully purchased item has uses other than further propagation.

D. Although the Federal Circuit has previously erred in fashioning a "conditional sale" exception to patent-exhaustion principles, those errors do not cast doubt on the court of appeals' decision here. The Federal Circuit's "conditional sale" decisions allow patent holders to retain control over the use or resale of a patented article even after an authorized sale of that article has occurred—the very thing the exhaustion doctrine is intended to prevent. By contrast, the patent-exhaustion doctrine has never been understood to limit the patent holder's right to exclude others from "mak[ing]" the patented invention. Thus, even assuming that respond-

ent's patent rights in the commodity seeds were exhausted, and that petitioner could lawfully have resold those seeds or used them for any purpose other than replanting, the court below properly treated petitioner's unauthorized creation of new seeds as an act of infringement.

ARGUMENT

THE AUTHORIZED SALE OF ONE GENERATION OF A PATENTED PLANT SEED DOES NOT EXHAUST A PATENTEE'S RIGHT TO CONTROL SUBSEQUENT GENERATIONS OF THAT SEED

The Patent Act grants a patentee the "right to exclude others from making, using, offering for sale, or selling the invention." 35 U.S.C. 154(a)(1); see 35 U.S.C. 271(a) ("[W]hoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent."). Each of the enumerated exclusive rights is a "substantive right[]" that "may be granted or conferred separately by the patentee." *Adams* v. *Burke*, 84 U.S. (17 Wall.) 453, 456 (1873); see *Brulotte* v. *Thys Co.*, 379 U.S. 29, 30 (1964); *Bauer & Cie* v. *O'Donnell*, 229 U.S. 1, 15 (1913) (*Bauer*).

Under longstanding principles of patent exhaustion, an initial authorized sale of an article embodying the patented invention exhausts the patentee's exclusive rights to control the use and sale of *that* article. It does not, however, exhaust the patentee's right to exclude others from making a new article embodying the same patented invention. Accordingly, even if respondent's patent rights in the commodity seed had been exhausted, petitioner acquired no right to use that seed to make newly infringing seed.

A. Under Well-Settled Principles Of Patent Exhaustion, The Authorized Sale Of One Article Embodying A Patented Invention Does Not Exhaust The Patentee's Exclusive Right To Control The Creation Of Other Articles Embodying The Same Invention

1. Since *Bloomer* v. *McQuewan*, 55 U.S. (14 How.) 539, 549-550 (1853), this Court has repeatedly held that the exclusive rights to use and to sell are exhausted, as to a given article embodying a patented invention, upon the first valid sale of the article by the patentee or an authorized licensee. See, *e.g.*, *Quanta Computer, Inc.* v. *LG Elecs., Inc.*, 553 U.S. 617, 625-628 (2008); *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 377 U.S. 476, 497 (1964) (plurality opinion); *United States* v. *Univis Lens Co.*, 316 U.S. 241, 251-252 (1942) (*Univis*); *Motion Picture Patents Co.* v. *Universal Film Mfg. Co.*, 243 U.S. 502, 508-518 (1917); *Keeler* v. *Standard Folding Bed Co.*, 157 U.S. 659, 666 (1895); *Hobbie* v. *Jennison*, 149 U.S. 355, 361-363 (1893); *Adams*, 84 U.S. (17 Wall.) at 456. Those decisions rest on the principle that "the sale by a person who has the full right to make, sell, and use such a machine carries with it the right to the use of that machine to the full extent to which it can be used." *Adams*, 84 U.S. (17 Wall.) at 455. Thus, the authorized sale of a patented article "exhausts the monopoly in that article and the patentee may not thereafter, by virtue of his patent, control the use or disposition of the article." *Univis*, 316 U.S. at 250.[2]

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[2] Whether an authorized sale that occurs overseas can exhaust a United States patent is a separate question that is not presented in this case and is not addressed by this brief. That question is the subject of a pending petition for a writ of certiorari. See *Ninestar Tech. Co.* v. *International Trade Comm'n*, No. 12-552 (filed Nov. 2, 2012).

The doctrine of patent exhaustion has always been carefully limited to a patentee's rights with respect to the particular article sold. As the Court explained in *Univis*, "the purpose of the patent law is fulfilled with respect to *any particular article* when the patentee has received his reward for the use of his invention by the sale of the article," and "once that purpose is realized the patent law affords no basis for restraining the use and enjoyment *of the thing sold.*" 316 U.S. at 251 (emphases added). This Court has consistently described the exhaustion doctrine in those terms. See, *e.g.*, *Quanta*, 553 U.S. at 625 (describing the "longstanding doctrine of patent exhaustion" as providing that "the initial authorized sale of a patented item terminates all patent rights to that item"); *Univis*, 316 U.S. at 249 (discussing exhaustion of the patent monopoly "with respect to the article sold"); *Bauer*, 229 U.S. at 17 (noting that "a patentee who has parted with a patented machine by passing title to a purchaser has placed the article beyond the limits of the [patent] monopoly"); *Adams*, 84 U.S. (17 Wall.) at 453 (explaining that, by selling a machine or instrument, the patentee has "received all the royalty or consideration which he claims for the use of his invention in that particular machine or instrument"); *Mitchell* v. *Hawley*, 83 U.S. (16 Wall.) 544, 547 (1873) (noting that, after an authorized sale, a patentee "ceases to have any interest whatever in the patented machine so sold and delivered").[3] An authorized sale exhausts a patentee's exclusive right to control the tangible article sold which embodies the invention; it does not exhaust his remaining exclusive rights in the invention.

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[3] Cf. 17 U.S.C. 109(a) (codifying first-sale doctrine in copyright law as authorizing the owner of a "particular copy * * * to sell or otherwise dispose of the possession of that copy").

2. The authorized sale of one article embodying the patented invention does not exhaust the patentee's right to exclude others from making another article embodying the same invention. The purchaser of a patented article "does not acquire any right to construct another machine," *Mitchell*, 83 U.S. (16 Wall.) at 548, or to make a "second creation of the patented entity," *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 365 U.S. 336, 346 (1961) (*Aro I*). Cf. *Bobbs-Merrill Co.* v. *Straus*, 210 U.S. 339, 350 (1908) ("The purchaser of a book, once sold by authority of the owner of the copyright, may sell it again, although he could not publish a new edition of it."). The right to use an article "to the full extent to which it can be used," *Adams*, 84 U.S. (17 Wall.) at 455, does not include the right to make a new patented article.

The critical distinction between use of a patented article, and the making of a new article, arises most frequently when courts determine whether the purchaser has permissibly repaired a patented article or instead has impermissibly reconstructed it. A patentee "cannot prevent those to whom he sells from . . . reconditioning articles worn by use," but it can prevent them from "in fact mak[ing] a new article." *Aro I*, 365 U.S. at 343 (quoting *United States* v. *Aluminum Co. of Am.*, 148 F.2d 416, 425 (2d Cir. 1945)); see *Wilbur-Ellis Co.* v. *Kuther*, 377 U.S. 422, 424 (1964) (explaining that unauthorized "reconstruction" impinges "on the patentee's right '*to exclude others from making*,' 35 U.S.C. § 154, the article"); *Cotton-Tie Co.* v. *Simmons*, 106 U.S. 89, 93-94 (1882) ("Whatever right the [purchasers] could acquire to the use of the old buckle, they acquired no right to combine it with a substantially new band, to make a cotton-bale tie."); *Wilson* v. *Simpson*, 50 U.S. (9

How.) 109, 123-125 (1850) (holding that the purchaser of a patented article may use and repair it, but may not reconstruct the patented invention); *Jazz Photo Corp.* v. *International Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001) ("[T]he rights of ownership do not include the right to construct an essentially new article on the template of the original, for the right to make the article remains with the patentee."), cert. denied, 536 U.S. 950 (2002).

3. Under those well-settled principles, the authorized sale of first-generation soybean seed exhausts the patentee's rights to control the use and disposition of *that* seed. If the purchaser is authorized to produce a new crop and to sell the progeny seed, an authorized sale of the second-generation seed exhausts the patentee's rights in that seed as well. But the right to exclude others from "mak[ing]" a patented invention is a distinct exclusive right. Thus, even when the patent has been exhausted with respect to a particular supply of seed, further reproduction always requires the express or implied authorization of the patentee.

Those principles compel affirmance of the court of appeals' decision here. The infringement finding in this case was premised on petitioner's creation of patented progeny seeds through planting and cultivation. Respondent did not authorize petitioner to make the progeny seeds, nor were they the subject of any authorized sale. Even assuming that respondent's rights in the commodity seeds had been exhausted, petitioner's rights to use and sell those seeds would not include the right to use them in the creation of new infringing articles.

B. Congress's Actions And This Court's Decisions Strongly Reinforce The Court Of Appeals' Ruling Here

Related federal legislation, as interpreted by this Court, strongly reinforces the court of appeals' conclusion that a patent holder retains the right to exclude others from making, using, and selling subsequent generations of patented seed. If any modification of traditional patent-exhaustion doctrine is deemed necessary to accommodate unique concerns raised by patented seed or other self-replicating technologies, that change should come from Congress.

1. In 1970, Congress enacted the Plant Variety Protection Act (PVPA), Pub. L. No. 91-577, 84 Stat. 1542 (7 U.S.C. 2321 *et seq.*). With respect to sexually reproduced plant varieties, the PVPA provides certain protections that are similar to, but not the same as, the protections afforded to patented plants. Developers of qualifying plant varieties acquire the rights to exclude others from, *inter alia*, "selling the variety," "reproducing it," and "using it in producing (as distinguished from developing) a hybrid or different variety." 7 U.S.C. 2483(a)(1). A person infringes those exclusive rights if, without authority, he "sell[s] or market[s] the protected variety," "sexually multipl[ies]" it as "a step in marketing," or "use[s] the variety in producing (as distinguished from developing) a hybrid or different variety." 7 U.S.C. 2541(a)(1), (3) and (4). The PVPA provides, however, that certain seed-saving and research activities will not constitute infringement. The seed-saving exemption states that

> it shall not infringe any right [under the PVPA] for a person to save seed produced by the person from seed obtained, or descended from seed obtained, by authority of the owner of the variety for seeding pur-

> poses and use such saved seed in the production of a crop for use on the farm of the person, or for sale as provided in this section.

7 U.S.C. 2543; see 7 U.S.C. 2544 (research exemption).

In *J.E.M. AG Supply, Inc.* v. *Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124 (2001) (*J.E.M.*), this Court held that utility patents are available to plants under the Patent Act, 35 U.S.C. 101, independent of any rights under the PVPA or the Plant Patent Act of 1930 (PPA), ch. 312, 46 Stat. 376.[4] In so holding, the Court repeatedly emphasized that, while the PVPA provides an exemption allowing farmers to save seed and to use that seed for replanting, there is no similar "exemption[] for * * * saving seed under a utility patent." *J.E.M.*, 534 U.S. at 143; see *id.* at 129 n.1 ("Most notably, the PVPA provides exemptions for research and for farmers to save seed from their crops for planting. Utility patents issued for plants do not contain such exemptions."); *id.* at 140 (citing PVPA seed-saving and research exemptions and noting that "[t]he utility patent statute does not contain similar exemptions"). In that respect, among others, "utility patent holders receive greater rights of exclusion." *Id.* at 143; see *id.* at 142 (noting that "the protections afforded by a utility patent are greater than those afforded by a PVP certificate"); *id.* at 140 n.11 (identifying another way in which a utility patent holder receives greater protection). That distinction would have no practical significance if the unauthorized crea-

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[4] The PPA expressly conferred patent protection on asexually reproduced plants. PPA, ch. 312, 46 Stat. 376 (amending general utility patent provision to include persons who had "invented or discovered and asexually reproduced any distinct and new variety of plant"); see Act of July 19, 1952, Pub. L. No. 82-593, 66 Stat. 804 (moving plant patent provisions to separate chapter without substantive change).

tion of new seed was treated as non-infringing under 35 U.S.C. 154 and 271 (2006 & Supp. V 2011) based on the patent-exhaustion doctrine.

Moreover, although the PVPA allows lawful purchasers of protected seed to save harvested seed and replant it on their own land, it imposes significant restrictions on the sale of the harvested seed. As amended in 1994, the PVPA allows such sales only "for other than reproductive purposes," *i.e.*, for purposes other than replanting. 7 U.S.C. 2543; see *Asgrow Seed Co.* v. *Winterboer*, 513 U.S. 179, 184 n.2 (1995) (explaining that the 1994 amendment "ha[d] the effect of eliminating [a prior] exemption from infringement liability for farmers who sell PVPA-protected seed to other farmers for reproductive purposes"). The logical implication of petitioner's exhaustion theory, by contrast, is that an authorized sale of one generation of patented seed allows the purchaser to plant the seed and to use or sell the progeny seed for *any* purpose (including replanting) without fear of infringement liability. Here again, petitioner's approach would afford greater rights of exclusion to holders of a PVP certificate than to utility patent holders, contrary to this Court's understanding in *J.E.M.* that "utility patent holders receive greater rights of exclusion." 534 U.S. at 143.

2. Petitioner refers to 25 years of congressional silence since the case law first recognized that "sexually reproducing plants qualify for utility patent protection." Br. 52. That silence is significant, but not for the reason petitioner suggests. Congress's inaction must be judged against the background rules that defined the scope of patent protection during the relevant period.

Under long-established principles of patent exhaustion, (1) the authorized sale of an article embodying a

patented invention exhausts only the patentee's right to control *that* article; and (2) absent an express or implied license from the patentee, the purchaser of an article embodying a patented invention acquires no right to make a second article embodying the same invention. See pp. 9-12, *supra*. In *Diamond* v. *Chakrabarty*, 447 U.S. 303, 305, 318 (1980), which involved a transformed bacterial cell line capable of being replicated to produce identical progeny cells, this Court held that organisms produced by genetic engineering are patent-eligible subject matter under 35 U.S.C. 101. In *J.E.M.*, the Court contrasted the PVPA's seed-saving exemption with the absence of any similar exemption under the Patent Act. And the Federal Circuit twice declined to find patent exhaustion with respect to the unauthorized planting of subsequent-generation seed. See *Monsanto Co.* v. *McFarling*, 302 F.3d 1291 (2002), cert. denied, 537 U.S. 1232 (2003); *Monsanto Co.* v. *Scruggs*, 459 F.3d 1328 (2006), cert. denied, 549 U.S. 1342 (2007). Against that backdrop, Congress's silence cannot reasonably be understood to imply approval of petitioner's approach.

With respect to computer software, by contrast, Congress has effectively extended copyright exhaustion principles to the creation, under specified circumstances, of subsequent generations of technology. Like soybeans, computer software can be reproduced in materially identical form with limited human intervention. It is often impossible, moreover, to use computer software for its intended purpose without making another copy. See, *e.g.*, *Vernor* v. *Autodesk, Inc.*, 621 F.3d 1102, 1109 (9th Cir. 2010) ("In order to use a software program, a user's computer will automatically copy the software into the computer's random access memory."), cert. denied, 132 S. Ct. 105 (2011). In 1980, Congress enacted

an "essential step defense," providing that "it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy or adaption of that computer program" in the manner specified. See Act of Dec. 12, 1980, Pub. L. No. 96-517, § 10(b), 94 Stat. 3028 (17 U.S.C. 117(a)). Such legislative action would have been unnecessary if the copyright exhaustion doctrine (codified at 17 U.S.C. 109(a)) already provided such a defense.

If any similar modification of the Patent Act is deemed necessary to accommodate unique concerns raised by patented seed, or other self-replicating technologies, that change should come from Congress. Cf. *Microsoft Corp.* v. *AT&T Corp.*, 550 U.S. 437, 458-459 (2007) ("If the patent law is to be adjusted better 'to account for the realities of software distribution,' the alteration should be made after focused legislative consideration, and not by the Judiciary forecasting Congress' likely disposition.") (citation omitted). Congress is better equipped than is this Court to weigh the competing interests of biotechnology firms, farmers, and the public. See *Diamond*, 447 U.S. at 317 (noting that policy arguments are better suited for "resolution within the legislative process after the kind of investigation, examination, and study that legislative bodies can provide and courts cannot"). The carefully tailored exemptions and defenses Congress has enacted in similar contexts, including the PVPA, are simply unavailable to this Court. Rather, if petitioner's approach were adopted, the first authorized sale of a single Roundup Ready soybean would extinguish all of respondent's patent rights to that soybean and to all of its progeny. See *Scruggs*, 459 F.3d at 1336 ("Applying the first sale doctrine to subsequent generations of self-replicating technology would

eviscerate the rights of the patent holder."). The incentive to invest in innovation and research might well be diminished if the patent term for genetically modified crops was effectively reduced from 20 years to a single year or even a single growing season. Cf. *Diamond*, 447 U.S. at 307 ("The patent laws promote * * * progress by offering inventors exclusive rights for a limited period as an incentive for their inventiveness and research efforts.").

The potential consequences of adopting petitioner's approach, moreover, are not limited to genetically modified crops. The Court's decision could also affect the enforcement of patents for man-made cell lines, DNA molecules, some nanotechnologies, and other technologies that involve self-replicating features. Ever since *Chakrabarty*, numerous companies have marketed patented recombinant plasmids and transformed cell lines capable of replication with limited human intervention. The patent rights recognized in *Chakrabarty* would lose much of their value if purchasers of patented bacteria or other self-replicating products could reproduce and sell those items free from the restraints of patent law.

3. Contrary to petitioner's suggestion (Br. 55-58), contract law is not a substitute for the patent protection granted by Congress. Contractual remedies are ineffective against downstream purchasers not in privity with the patent holder. For example, a person could purchase and plant commodity seed without ever purchasing Roundup Ready soybean seed directly from respondent or a licensed seed company. And patent law provides remedies unavailable under contract law, including injunctive relief and enhanced damages. See 35 U.S.C. 283-285.

C. Petitioner's Other Arguments Are Unpersuasive

Petitioner does not dispute the fundamentals of the patent-exhaustion doctrine: the authorized sale of an article embodying the patented invention exhausts the patentee's exclusive right to control *that* article, but it does not exhaust his exclusive right to control a different article embodying the same invention. And petitioner concedes (Br. 37) that "the exhaustion doctrine does not extend to the right to 'make' a new product." Petitioner nevertheless contends that the authorized sale of one generation of patented soybean seed exhausts a patentee's right to control the making, sale, and use of all subsequent generations derived from that seed. Petitioner's arguments are unpersuasive.

1. Relying on *Quanta*, petitioner contends (Br. 34-37) that the authorized sale of first-generation Roundup Ready soybean seed exhausts respondent's patent rights with respect to all future generations derived from that seed because each subsequent generation is "embodied" in the first-generation seed. That argument reflects a fundamental misunderstanding of the Court's decision in *Quanta*.

In *Quanta*, this Court held that the patent-exhaustion doctrine applies to method claims. 553 U.S. at 628-629. The Court recognized that "a patented method may not be sold in the same way as an article or device" and that, with respect to method claims, the article sold may not fully practice the patent, *i.e.*, the article may be "incomplete." *Id.* at 628, 630. In considering when the sale of a product that only "partially practice[s] a patent * * * exhaust[s] *that* patent," *id.* at 635, the Court focused on "the extent to which a product must embody a patent in order to trigger exhaustion," *id.* at 630. To answer that question, the

Court looked to whether the article sold "embodie[d] essential features of [the] patented invention" and whether the "only reasonable and intended use" of that article was to "practice the patent." *Id.* at 631-632 (citation omitted; brackets in original).

Petitioner contends that, with respect to the patented seed at issue here, "[t]he rule in *Quanta* should be applied to the first authorized sale of an article embodying the invention." Br. 35. Petitioner also observes that respondent "has authorized the sale of an article that can be used to practice the claimed inventions because seeds will self-replicate by normal use." *Ibid.* Petitioner appears to contend that, by authorizing the sale of first-generation Roundup Ready seeds, respondent has exhausted its right to control *any* direct or indirect use of those seeds to practice respondent's invention. The Court in *Quanta* focused on the prerequisites to exhaustion of method patents, and its analysis is not easily applied to patents on "manufacture[s]" or "composition[s] of matter," 35 U.S.C. 101. Petitioner's reliance on *Quanta* is further misplaced for at least two reasons.

First, petitioner relies on the established general rule that one who acquires a patented article through an authorized sale may "use" that article without incurring infringement liability. Br. 34 ("Once a patentee sells a product embodying a patented method, the patentee loses the ability to restrict use of that product to practice the invention."). The Court in *Quanta* applied that rule to an "incomplete article" that, while not itself practicing the patents at issue, "substantially embodie[d]" the seller's method patent. 553 U.S. at 633. As we explain above (pp. 11-12, *supra*), however, the general rule has always been subject to an important qualification: even the lawful owner of a patented article

may not, without authorization, use it to make a *new* copy of the patented article. Nothing in *Quanta* casts doubt on that proposition. To the contrary, the Court described the "longstanding doctrine of patent exhaustion" as providing that the "initial authorized sale of a patented item terminates all patent rights to *that* item." 553 U.S. at 625 (emphasis added).

Second, planting is not the "only reasonable and intended use" of the commodity soybeans at issue here. *Quanta*, 553 U.S. at 631; see Pet. App. 14a. Growers can use the seed for animal feed, *ibid.*, and they can sell it as a commodity. See *Asgrow*, 513 U.S. at 188 ("Farmers generally grow crops to sell.").[5] Indeed, because for soybeans "the crop is the seed," *ibid.*, it would be pointless to produce soybeans if the seed had no productive use other than further propagation. Where, as here, a purchaser can use the patented article without also making a newly infringing article, it would be particularly unsound to treat the initial sale as extinguishing the patentee's separate and exclusive right to make the invention. See *Adams*, 84 U.S. (17 Wall.) at 456 (exclusive rights "may be granted or conferred separately by the patentee").

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[5] Petitioner does not dispute that the commodity seed he purchased has other uses, but he contends that "planting is the *only* intended use for *first-generation* Roundup Ready® seeds." Br. 35 (second emphasis added). Like other soybeans, first-generation Roundup Ready seed could also be used for other purposes such as feed. Purchasers presumably would be unwilling, however, to pay a premium for first-generation Roundup Ready seed if it could not be used for planting, since the glyphosate-resistance associated with the patented technology would be of no benefit if the seed were used as animal feed. Consistent with that fact, respondent granted growers a license to plant first-generation seed to produce one commercial crop in a single growing season. See Pet. App. 7a.

2. Petitioner advances (Br. 37-42) several reasons why growing new seeds that fully embody the patented invention should not be considered "making" the patented invention. None withstands scrutiny.

a. Petitioner contends (Br. 38-39) that the creation of newly infringing seed does not amount to "reconstruction" of a patented article. That is true, but irrelevant. Unauthorized reconstruction is an act of infringement because it implicates a patent holder's exclusive right to "make" the patented invention. *Wilbur-Ellis*, 377 U.S. at 424 ("[T]he right to renew [the invention] depends upon the right to make [it]," and "[i]f the right to make does not exist, there is no right to rebuild" the invention.). But a person can "make" a patented invention without replacing "worn out" parts (Pet. Br. 38). This Court's "reconstruction" cases are relevant not because petitioner actually reconstructed a "worn out" soybean seed, but because that case law exemplifies a critical qualification to the exhaustion doctrine—that, absent an express or implied license, the authorized sale of an article embodying a patented invention does not give the purchaser the right to make a new patented article.

The established distinction between permissible repair and impermissible reconstruction also reveals the flaw in petitioner's suggestion that the lawful owner of an article embodying a patented invention can "use" that article in any conceivable way—even to "make" a new article embodying the same invention. The repair/reconstruction cases demonstrate that the right to "use" and the right to "make" are not mutually exclusive. And they reflect the understanding that, even when the patentee's rights in a sold article have been exhausted, infringement may still occur if the purchaser "uses" the sold article to "make" a newly infringing one.

In the *Cotton-Tie* case, for example, the defendant infringed the patent by "using" a buckle he had lawfully purchased to "make" a new cotton-bale tie. 106 U.S. at 93-94; cf. 7 U.S.C. 2541(a)(4) (holder of PVP certificate can exclude others from "us[ing]" a protected variety to "produc[e]" a different variety). Similarly here, petitioner was properly held liable for patent infringement because he "used" the commodity seed purchased from the grain elevator to "make" newly infringing seed. This is not a matter of "carv[ing] out *permissible* and *impermissible* uses," Pet. Br. 38-39, but of preserving a patentee's separate right to exclude others from "mak[ing]" the patented invention.

b. Petitioner takes issue (Br. 39-42) with the government's definition of the term "make," but he does not offer an alternative definition that would exclude the intentional reproduction of patented seed at issue here. And the arguments he advances lack merit.

i. The Patent Act does not define the term "make." In *Bauer*, the Court explained that "[i]n framing the [Patent A]ct and defining the extent of the rights and privileges secured to a patentee Congress did not use technical or occult phrases, but in simple terms gave an inventor the exclusive right to make, use and vend his invention for a definite term of years." 229 U.S. at 10. With respect to the "right to make" in particular, the Court explained that it could "scarcely be made plainer by definition" and that, for purposes of that case, it clearly "embraces the construction of the thing invented." *Ibid.*; see *id.* at 9-10 (noting that the original Patent Act granted patentees exclusive rights of "making" and "constructing," but that the word "constructing" was omitted in 1836).

The Copyright Act affords copyright holders an exclusive right to "reproduce" the copyrighted work in copies and phonorecords, 17 U.S.C. 106(1), that is akin to the exclusive right to "make" the patented invention in the Patent Act, 35 U.S.C. 154(a)(1). Cf. *Bauer*, 229 U.S. at 13-14 (noting similarities between exclusive rights granted by the two statutes). Indeed, in describing the act of reproduction in copies or phonorecords, Congress has sometimes referred to it as the making of copies or phonorecords of a work. See 17 U.S.C. 115 (2006 & Supp. V 2011) (referring to the "exclusive right[] provided by clause (1) * * * of section 106" as the right "to make * * * phonorecords of such works"); see also 17 U.S.C. 112(e)(6)(A), 117(a). The dictionary definitions of both terms are also similar. The term "make" is commonly defined as "to bring about," "to cause to happen," or "to cause to exist, occur, or appear." *Webster's Third New International Dictionary* 1363 (1993). "Reproduce," in turn, can mean to "bring about again" or to "cause to exist again or anew." *Id.* at 1927.

The exclusive right to "make" can thus readily be understood to embrace reproduction of the article embodying the patented invention. Indeed, the PVPA, which specifically addresses sexually reproduced plant varieties like soybeans, confers on certificate holders an exclusive right to "reproduc[e]." 7 U.S.C. 2483(a)(1); cf. *Asgrow*, 513 U.S. at 191 (contrasting sales of seeds "for replanting" with sales "for nonreproductive purposes"). And, as this Court explained in *J.E.M.*, the protections afforded to patented plants are broader than those afforded to PVPA-protected plants. 534 U.S. at 142, 143. Petitioner plainly "reproduc[ed]" Roundup Ready seed when he planted commodity seed that included the

Roundup Ready trait and harvested its materially identical progeny. Whatever its outer limits, a patent holder's right to exclude others from "mak[ing]" the patented invention includes the right to bar others from reproducing the patented invention.

ii. Petitioner's reliance (Br. 41) on *Deepsouth Packing Co.* v. *Laitram Corp.*, 406 U.S. 518 (1972) (*Deepsouth*), is misplaced. In *Deepsouth*, the Court concluded that a company did not "make" the patented invention in the United States when only the combination was patented and the actual assembly of that combination, from parts made in the United States, occurred overseas. The Court held that the manufacture of the constituent parts did not, by itself, constitute the "making" of the combination. *Id.* at 527-528. And while the patented combination was "ma[d]e" when the constituent parts were assembled, that conduct did not infringe the relevant patent because the assembly occurred outside the United States. *Id.* at 526-527.

Thus, *Deepsouth* stands only for the unremarkable proposition that, in the case of combination patents, a person does not infringe by "making" a product that contains fewer than all the claimed elements. That rule is of no help to petitioner here, since his activities culminated, and were intended to culminate, in the creation of the final patented product in the United States. That is all *Deepsouth* requires.[6]

iii. Petitioner next suggests (Br. 42) that farmers do not "make" the patented seed because soybean seed "will self-replicate or 'sprout' unless stored in a con-

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[6] Petitioner's reliance (Br. 42) on *Radio Corp. of America* v. *Andrea*, 79 F.2d 626, 628 (2d Cir. 1935), is misplaced for the same reasons.

trolled manner to prevent this natural occurrence." That is incorrect both factually and legally.

Although a few soybeans may "sprout" from the previous year's crop, human intervention is needed to produce the next generation of soybeans. Farmers typically choose where and when to plant the next season's crop; plant the seeds; apply insecticides and fungicides; control for weeds; and finally harvest the progeny seed. See generally Iowa State Univ., *Soybean Extension and Research Program*, Jan. 4, 2008, http://extension.agron.iastate.edu/soybean/topicpage1.html. In this case, petitioner intentionally planted the seed he purchased from the grain elevator in order to create a new crop of soybeans; he saved some of that new crop to replant the next growing season; he continued to plant, harvest, and save seed for eight successive years; and he exploited the known glyphosate-resistant properties of the progeny seed by treating his crops with a glyphosate-based herbicide. See Pet. App. 9a-10a; Pet. Br. 42.[7]

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[7] Petitioner's amici (*e.g.*, Knowledge Ecology Int'l Amicus Br. 10-11; Center for Food Safety et al. Amicus Br. 38-40) raise concerns about "inadvertent" infringement, *i.e.*, circumstances in which a Roundup Ready soybean seed replicates itself without human intervention, or in which a farmer plants or harvests soybean seed without knowing that some of the seed contains patented Roundup Ready technology. They do not, however, identify any reason to suppose that respondent or any similarly situated patent holder is likely to file suit in those circumstances. See *Organic Seed Growers & Trade Ass'n* v. *Monsanto Co.*, 851 F. Supp. 2d 544, 549-550, 552-553 (S.D.N.Y. 2012) (noting respondent's policy never "to exercise [its] patent rights where trace amounts of [its] seed or traits are present in [a] farmer's fields as a result of inadvertent means," and finding no evidence of respondent bringing an infringement action for inadvertent use) (third brackets in original). The speculative possibility that respondent could sue a truly inadvertent infringer for patent infringement provides no sound basis for a wholesale expansion of the

To be sure, petitioner created the progeny seed through a method different from the one used by respondent to genetically engineer the first Roundup Ready seed. But neither that difference, nor the fact that petitioner harnessed natural forces in the production of the progeny seed, insulates his conduct from infringement liability. "[T]he inventor of a new and useful product or article of manufacture may have a patent which covers it and gives a monopoly upon it regardless of great variations in the method of making." *Dunn Wire-Cut Lug Brick Co.* v. *Toronto Fire Clay Co.*, 259 F. 258, 261 (6th Cir. 1919). And the manufacture of chemical compounds, for example, often involves the creation of favorable conditions for natural reactions to occur. Cf. *Microsoft Corp.*, 550 U.S. at 456-457 (acknowledging that copies of patented software can be "made" simply by reproducing copies from a master disk). Regardless of the method, any unauthorized making of a patented invention constitutes infringement.

iv. Petitioner also argues (Br. 39-40) that the Court should not adopt the dictionary definition of "make" because doing so would transform indirect infringers into direct infringers, rendering 35 U.S.C. 271(b) and (c) "superfluous." As noted above, the Court need not define the outer limits of the term "mak[e]" in Sections 154(a) and 271(a) in order to conclude that the term embraces the reproduction of patented seed.

In any event, defining "make" as "to cause to exist" does not eradicate the distinction between direct and indirect infringement. In arguing otherwise, petitioner appears to equate the dictionary definition of "make" with a but-for causation standard for direct infringe-

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patent-exhaustion doctrine to include the deliberate unauthorized "mak[ing]" of self-replicating technologies.

ment, under which any person who performs an act that ultimately leads to the creation of a patented invention "makes" that invention. Petitioner fails to recognize that cases of direct infringement—unlike indirect infringement—do not require the intervening act of another person. Cf. *Akamai Techs., Inc.* v. *Limelight Networks, Inc.*, 692 F.3d 1301, 1305-1306 (Fed. Cir. 2012) (en banc) ("[T]he entity that installs the final part and thereby completes the claimed invention is a direct infringer."), petition for cert. pending, No. 12-786 (filed Dec. 28, 2012). For example, the person who sells one component of a patented machine or combination with the intent or requisite knowledge that the purchaser will use it to create the infringing machine or combination would be liable for indirect infringement, see *Global-Tech Appliances, Inc.* v. *SEB S.A.*, 131 S. Ct. 2060, 2066-2068 (2011); the purchaser who actually created the infringing machine or combination would be liable for direct infringement. Whether or not the indirect infringer could be said to have "caused" the infringing article "to exist" in some metaphysical sense, the infringing article would *not* exist without the actions of the direct infringer.

Under any reasonable definition of the term, petitioner "ma[d]e" a patented invention: the new Roundup Ready soybean seed.

3. Petitioner contends (Br. 42-44) that "[f]armers who plant Roundup Ready® seeds purchased from [respondent] or its licensees lawfully own all progeny seeds" because they have "all traditional indicia of ownership[,] * * * including title, possession, control, and the right to sell." Ownership, so defined, is not the trigger for patent exhaustion. The defendant in the *Cotton-Tie* case, for example, would have been an "owner" in

petitioner's view because he had "possession" of and "title" to the new cotton-bale tie and bore the "risk of loss" inherent in its making. He was still liable for patent infringement, however, because without authorization he had made the patented invention anew. Because petitioner acquired "ownership" of the commodity seed's progeny not through an authorized sale of *that* seed, but rather through an infringing act (*i.e.*, the unauthorized making of a new article), respondent's patent rights with respect to the progeny seed remain intact.[8]

D. Although Prior Federal Circuit Decisions Applying A "Conditional Sale" Doctrine Are Erroneous, Those Errors Do Not Cast Doubt On The Court Of Appeals' Decision In This Case

The court of appeals found petitioner liable for patent infringement because he had "created a newly infringing article" when he "plant[ed] the commodity seeds containing [respondent's] Roundup Ready® technology and the next generation of seed develop[ed]." Pet. App. 14a. For the reasons set forth above, that analysis is correct. In the course of arguing that his own conduct was not infringing, petitioner challenges the validity of prior Federal Circuit decisions that applied a "conditional sale" exception to patent-exhaustion principles. See Pet. Br. 17-34. We agree with petitioner that the Federal Circuit's "conditional sale" doctrine is erroneous and inconsistent with *Quanta*. The Federal Circuit's errors

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[8] Petitioner also relies (Br. 44-51) on the "longstanding policy against restraints on the alienation of personal property," but that policy is not implicated here. The owner of a patented seed that has been subject to an authorized sale is free to dispose of that personal property in any way that he sees fit—consistent with contractual or other legal obligations. He simply cannot create an additional piece of patented personal property.

in prior cases, however, do not cast doubt on the correctness of the decision below.

1. Before *Quanta*, the doctrine of patent exhaustion had evolved in the Federal Circuit in a manner that was materially different from the principles articulated by this Court. Beginning with *Mallinckrodt, Inc.* v. *Medipart, Inc.*, 976 F.2d 700, 706-708 (1992), the Federal Circuit had found the exhaustion doctrine inapplicable to what it viewed as "conditional" sales, a category that encompassed any sale subject to unilateral or bilateral restrictions on the use or resale of the purchased article. As a result, a patentee could attach (by notice or agreement) restrictions on products embodying his patented invention, and could enforce those restrictions through actions for patent infringement against downstream purchasers even after an authorized sale by the patentee or a licensee. See *LG Elecs., Inc.* v. *Bizcom Elecs., Inc.*, 453 F.3d 1364, 1369-1370 (Fed. Cir. 2006), rev'd by, *Quanta Computer, Inc.* v. *LG Elecs., Inc.*, 553 U.S. 617 (2008). In the Federal Circuit's view, such restrictions were enforceable in patent-infringement suits unless the restriction was not "within the patent grant" (*i.e.*, did not "relate[] to subject matter within the scope of the patent claims"), had "anticompetitive effects extending beyond the patentee's statutory right to exclude," and violated antitrust law. *Mallinckrodt*, 976 F.2d at 708.

That approach is irreconcilable with this Court's precedents. As the United States explained in *Quanta*, this Court's decisions make clear that patent exhaustion applies despite explicit restrictions imposed by the patentee, as long as there has been an authorized sale of the patented item. U.S. Merits Amicus Br. at 8-24, *Quanta*, *supra* (No. 06-937). Since at least 1853, this Court has held that a patentee's (or authorized licen-

see's) sale of an article embodying the patentee's invention frees that particular article from any further patent-law restrictions on its use or resale. See p. 9, *supra* (citing cases); Pet. Br. 17-28. Indeed, this Court has repeatedly applied the patent-exhaustion doctrine in concluding that explicit restrictions imposed on authorized purchasers were ineffective as a matter of patent law. See, *e.g.*, *Univis*, 316 U.S. at 244, 249-252; *Boston Store* v. *American Graphophone Co.*, 246 U.S. 8, 25 (1918); *Motion Picture Patents*, 243 U.S. at 506-507, 516. Restrictions on downstream use or resale may be enforceable as a matter of state contract law, but a purchaser's failure to comply with such restrictions does not constitute patent infringement.

In deciding *Quanta*, the Court did not explicitly overrule the Federal Circuit's "conditional sale" doctrine or even cite *Mallinckrodt*. The Court did, however, repeatedly describe the patent-exhaustion doctrine in terms that leave little room for enforcement through patent law of post-sale restrictions on use or resale. See, *e.g.*, 553 U.S. at 625 (describing the "longstanding doctrine of patent exhaustion" as providing that "the initial authorized sale of a patented item terminates all patent rights to that item"); *id.* at 631 (explaining that the Court in *Univis* held that "the authorized sale of an article * * * is a relinquishment of the patent monopoly with respect to the article sold") (quoting 316 U.S. at 249). And the Court declined to give effect to the post-sale use restriction at issue in *Quanta* itself. *Id.* at 636-637. Even though LGE had required "Intel to give notice to its customers" that "LGE had not licensed [them] to practice its patents," the Court found that LGE's patent rights were exhausted because Intel's "authority to sell its products embodying the LGE Pa-

tents was not conditioned on the notice or on [the purchaser's] decision to abide by [that] notice." *Id.* at 636-637.

Accordingly, the Federal Circuit's "conditional sale" doctrine cannot be reconciled with this Court's precedents. If a purchaser acquires title to an item embodying the patented invention through a sale authorized by the patentee, the patent is exhausted as to that item—even if the sale is expressly made subject to an explicit restriction on subsequent use or resale.

2. The flaws in the Federal Circuit's "conditional sale" precedents, however, do not cast doubt on the correctness of the court's decision in this case. The essence of the patent-exhaustion doctrine is that, in acquiring valid title to a particular patented article, the purchaser also acquires the right to use and to sell that article without fear of infringement liability. That doctrine would be largely eviscerated if the patent holder could render it inapplicable simply by declaring at the time of the initial authorized sale that the transfer of title was subject to specified post-sale restrictions on resale or use. The Federal Circuit's "conditional sale" precedents are thus inconsistent with the core rationale for the patent-exhaustion doctrine.

By contrast, this Court's patent-exhaustion decisions do not suggest that one who acquires title to a patented article thereby acquires the right to *make additional* articles that also practice the patent. The patent holder's statutory right to exclude others from "mak[ing]" the patented invention is separate and distinct from the rights to exclude others from "us[ing]" and "sell[ing]" it. Although the authorized sale of a patented article exhausts the latter two rights, any creation of a new patented article requires a separate authorization. Re-

spondent did not authorize petitioner to plant the commodity seed to produce a new crop, and petitioner's lawful acquisition of the commodity seed did not carry with it the "right to construct an essentially new article on the template of the original." Pet. App. 14a (quoting *Jazz Photo*, 264 F.3d at 1102).

As the court of appeals correctly recognized, it is unnecessary for purposes of this case to decide whether respondent's patent rights in the commodity seed purchased from the grain elevator had been exhausted. "Even if [respondent's] patent rights in the commodity seeds are exhausted, such a conclusion [is] of no consequence because once a grower, like [petitioner], plants the commodity seeds containing [respondent's] Roundup Ready® technology and the next generation of seed develops, the grower has created a newly infringing article." Pet. App. 14a. That holding is correct and consistent with this Court's patent-exhaustion precedents.

CONCLUSION

The judgment of the court of appeals should be affirmed.

Respectfully submitted.

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AMICUS CURIAE BRIEF

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No. 11-796

IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO CO., *et al.*,

Respondents.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF FOR AGILENT TECHNOLOGIES, INC., ILLUMINA, INC., LIFE TECHNOLOGIES CORP., PROMEGA CORP., QIAGEN N.V., AND ROCHE MOLECULAR SYSTEMS, INC. AS *AMICI CURIAE* IN SUPPORT OF RESPONDENTS

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QUESTION PRESENTED

35 U.S.C. § 271(d) provides in part: "No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having . . . (4) refused to license or use any rights in the patent; or (5) *conditioned the* license of any rights to the patent or *sale of a patented product* on the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned" (emphasis added).

The question presented is:

Whether the current Patent Act permits conditional sales of products embodying patented inventions, under which (i) a buyer receives (and pays for) only predefined rights to use and resell invention(s) that a purchased product embodies, and (ii) a patentee reserves the right to sue for infringement in the event that a sale condition is violated.

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INTEREST OF AMICI CURIAE

The undersigned amici are developers, manufacturers and marketers of products and methods having diverse uses including (i) biomedical research, (ii) commercial diagnostic testing, and (iii) industrial scale manufacturing. Amici are vitally interested in this case because the petitioner and his amici have urged an erroneous interpretation of the current Patent Act that, if accepted, would undermine innumerable existing contracts for the commercialization of patented innovations and cause significant disruption to amici's business. [1]

The biotechnology and research tools industry (the "Industry") is diverse, embracing public and private, non-profit and for-profit, and academic and corporate institutions. The Industry spends billions of dollars each year developing technologies that support both research and development activities and diverse commercial and industrial activities. Commercial biotechnology products provide new sources of energy, more accurate techniques for identifying criminals or exonerating the innocent, improved food safety testing, and faster and more discriminating methods for diagnosing, detecting, and treating diseases including cancer and infections.

Amici rely heavily on 35 U.S.C. § 271(d) and the principles of divisibility and party autonomy that the statute implements. For example, amici frequently sell research tools to persons engaged in university research. Such sales are typically made on "research use only" conditions that exclude industrial or commercial activities. By retaining use and sale rights that university researchers have no need to buy or pay for, research tool companies are able to make patented research products available to biomedical researchers at prices that are tailored to the needs and economics of the persons engaged in research, and hence are more affordable than would be the case if

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[1] No counsel for any party authored this brief in whole or in part. No party made a monetary contribution intended to fund the preparation or submission of this brief. The parties have consented to the filing of this brief.

researchers had to pay for manufacturing, commercial diagnostic, or other non-research use rights.

Divisibility of patent rights and party autonomy in contracting are also important to the federal government's ability to maximize its return on investment in biomedical research and to carry out the purposes of the Bayh-Dole Act, 35 U.S.C. §§ 200-212. By keeping prices lower for products sold for research use only, conditional sale and license transactions allow more research to occur for every dollar of federal research funds that are granted. And where federal funding results in the United States owning patents, the Patent Act authorizes agencies to grant "nonexclusive, exclusive, or partially exclusive licenses under federally owned inventions, royalty-free or for royalties or other consideration," and "on such terms and conditions as the granting agency considers appropriate." 35 U.S.C. §§ 207(a)(2), 209(d).

Divisibility of patent rights and party autonomy in contracting are also critical to the biotechnology technology transfer system that has developed over past decades. This technology transfer system gives members of the Industry, including teaching and research universities, flexibility to work with multiple parties in different fields, or at different levels or places within the same field, to put patented technology to its highest and best use with the best partner. This is particularly relevant where the patented technology has many uses but no single licensee could use, develop, or commercialize a technology for all possible uses and benefits.

Uses of biomedical technologies are often subject to restrictions in patent license agreements that limit licensees to uses in specific fields and allow other licensees the right to use in other fields. Patent right divisibility and party autonomy in contracting help licensees navigate this often complex field of patent rights use restrictions. When a licensee develops and sells a new product that comprises amici's patented technology, conditional sale and license terms provide a mechanism that enables the licensee to comply with field of use and other restrictions in its contracts for the sale of products embodying amici's patented inventions. Without the ability to make se-

lective waivers of patent rights, the biomedical technology transfer system would be severely disrupted and thousands upon thousands of existing licenses would be undermined.

Divisibility of patent rights and party autonomy in contracting are also critical to the commercialization of patents disclosing readily replicable technologies. Many research tools are replicable, such as cell lines and DNA vectors. If a patentee could not retain certain use and resale rights when selling products embodying novel replicable technologies, a customer could buy a product once and then easily replicate and resell it an indefinite number of times, in either identical or modified form. This would severely disrupt the network of limited use patent licenses for the technology, force higher prices, and deprive the Industry of incentives for developing and selling replicable research tools.

SUMMARY OF THE ARGUMENT

Contracts for the sale of products that embody patented inventions are typically made under and governed by state law. "There is no general federal common law." *Erie R. Co. v. Tompkins*, 304 U.S. 64, 78 (1938). Nothing in the text of the Patent Act purports to prescribe minimum use rights or other terms which must be included in contracts for the sale, lease, or license of products that happen to embody patentable subject matter.

In 1988, the Patent Act was amended to provide explicit authorization for sales of a patented product to be "conditioned." 35 U.S.C. § 271(d)(5). *Cf. Illinois Tool Works Inc. v. Independent Ink, Inc.*, 547 U.S. 28, 31-32, 42-43 (2006) (patented ink jet cartridges sold on condition that buyers purchase unpatented ink from plaintiff). This amendment restored "the general rule" of "absolute freedom in the use or sale of rights under the patent laws of the United States." *Bement v. Nat'l Harrow* Co., 186 U.S. 70, 91 (1902). Under this rule, "with few exceptions" (such as those imposed on common carriers), "any conditions which are not in their very nature illegal with regard to this kind of property, imposed by the patentee and agreed to by the licensee for the right to manufacture

or use or sell the article, will be upheld by the courts." *Id.*

In *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008), this Court reaffirmed "the rule that 'the right to vend is exhausted by a single, *unconditional* sale.'" *Id.* at 626 (quoting *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 516 (1917) (emphasis added)). *See also id.* at 637 ("No conditions limited Intel's authority to sell products substantially embodying the patents.") At issue here, by contrast, is whether the current Patent Act permits enforcement of *conditional* sales agreements, under which a buyer receives (and pays for) only limited rights of use and a patentee waives only some of its statutory rights to exclude using, making, or selling of invention(s) that a sold product embodies. *Cf. Gen. Talking Pictures Corp. v. Western Elec. Co.*, 305 U.S. 124, 127 (1938) (patent licensee had no contractual authority to sell patented products outside of licensed field and purchaser of such licensee was an infringer).

In seeking reversal of the judgment below, the petitioner and his amici inappropriately rely on case law interpreting the 1870 Act which has been legislatively overruled. The judgment of the Federal Circuit in this case was correct and should be affirmed.

I. CONTRACTS FOR THE SALE OR LICENSE OF PATENTABLE SUBJECT MATTER ARE GENERALLY GOVERNED BY STATE LAW.

"Commercial agreements traditionally are the domain of state law." *Aronson v. Quick Point Pencil Co.*, 440 U.S. 257, 262 (1979). "State law is not displaced merely because the contract relates to intellectual property which may or may not be patentable; the states are free to regulate the use of such intellectual property in any manner not inconsistent with federal law." *Id. See also Luckett v. Delpark, Inc.*, 270 U.S. 496, 502 (1926) ("It is a general rule that a suit by a patentee for royalties under a license or assignment granted by him, or for any remedy in respect of a contract permitting use of the patent is

not a suit under the patent laws of the United States").[2]

It is, thus, in the first instance a matter of state law whether party autonomy exists with respect to the subject matter of a contract or license involving patent rights, and whether title to tangible personal property is burdened or conditioned. *Cf. Quanta*, 553 U.S. at 636-37 (analyzing License Agreement to determine if it imposed "conditions" on licensee's "authority to sell" products embodying patent-eligible subject matter); *Gen. Talking Pictures*, 305 U.S. at 127 (patent licensee had no contractual authority to sell patented products outside of licensed field and purchaser of such licensee was an infringer); *Mitchell v. Hawley*, 83 U.S. (16 Wall.) 544, 548 (1873) ("Sales of the kind may be made by the patentee with or without conditions . . . ."). *See also Apple Inc. v. Psystar Corp.*, 658 F.3d 1150, 1155 (9th Cir. 2011) (noting that "license agreements, rather than sales, have become the predominate form of the transfer of rights to use copyrighted software material"); *Waring v. WDAS Broad. Station, Inc.*, 194 A. 631, 637-38 (Pa. 1937) (enforcing label restriction that sound recording was "not licensed for radio broadcast").

Highly developed bodies of state law, such as Articles 2 and 2A of the Uniform Commercial Code, prescribe terms and conditions on which patentees and their vendees may contract with one another for the purchase and sale of products embodying patented or patentable subject matter. Amici are aware of no state law which requires a patentee to sell, or which requires a purchaser to take and pay for, more rights under a patent than the seller is willing to grant and the buyer is willing to purchase and pay for in connection with the sale, lease, or license of

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[2] To the extent that *Motion Picture Patents* and its progeny relied on "the general law," *Boston Store of Chicago v. Am. Graphophone Co.*, 246 U.S. 8, 25 (1918), they have been superseded by intervening precedent. *See Erie*, 304 U.S. at 78 ("There is no general federal common law."). *See also Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 58-59 (1977) (overruling prior precedent which had distinguished between lawfulness of vertical non-price distribution restraints based on whether a seller did or did not retain title to sold products).

products that embody a patented or patentable invention.

35 U.S.C. § 261 provides in part: "Subject to the provisions of this title, patents shall have the attributes of personal property." Nothing in the text of the Patent Act purports to prescribe minimum quantities of rights that must comprise a license of rights under a patent or that must comprise terms of a sale, lease, or license of a machine, manufacture, composition of matter, or process that happens to embody patented or patentable subject matter

II. THE CURRENT PATENT ACT EXPRESSLY PERMITS CONDITIONAL SALES OF PRODUCTS EMBODYING PATENTED INVENTIONS.

35 U.S.C. § 271(d) provides in part (emphasis added):

> No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having . . . (4) refused to license or use any rights in the patent; or (5) *conditioned the* license of any rights to the patent or *sale of a patented product* on the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned" (emphasis added)

The above-quoted statute overruled precedent of this Court which had "strictly construed" § 22 of the Patent Act of 1870 (the "1870 Act"), 16 Stat. 201. *Cf. United States v. Masonite Corp.*, 316 U.S. 265, 280 (1942) ("the scope of the right to 'vend' cannot be determined by reference to the private law of sales alone. Since patents are privileges restrictive of a free economy, the rights which Congress has attached to them must be *strictly construed* so as not to derogate from the general law beyond the neces-

sary requirements of the patent statute.") (emphasis added).

.In a controversial series of decisions handed down between 1917 and 1944, this Court renounced prior authority[3] and held that if a patentee or its licensee sold a product that embodied a patented invention, the sale "exhausted" the patentee's statutory right to exclude "use" of invention(s) that the sold product embodied. Thus in *Motion Picture Patents*, machines embodying one or more patented inventions had been sold on the condition they be used only with certain film material that the plaintiff sold or controlled. Notwithstanding that the plaintiff's manufacturing licensee had sold the machines to buyers "practically at its cost" and expected to make "its entire profit from the sale of the supplies with which it is operated," the patentee was held to have no post-sale right to enjoin use of the machines with unapproved film, even if the condition of sale were violated. 243 U.S. at 517.

In *Ethyl Gasoline Corp. v. United States*, 309 U.S. 436 (1940), a patentee held separate patents on (i) a fuel additive and (ii) blended gasoline comprising the additive. The patentee sold the additive to refiners on the condition that they sell the separately patented blended gasoline only to vendees who had been licensed by the patentee to use and sell the product. Once again taking a narrow interpretation of § 22 of the 1870 Act, the Court held that the patentee could not enforce the condition in its licenses of the blended gasoline patent once it sold the additive to the refiners. *Id.* at 457.

In *United States v. Univis Lens Co.*, 316 U.S. 241 (1942), a patentee licensed an affiliate to manufacture and sell bifocal eyeglass lens blanks on the condition that they be sold only to qualified downstream licensees. The issue was whether, under the Court's then prevailing interpretation of § 22 of the 1870 Act

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[3] *See Mercoid Corp. v. Mid-Continent Investment Co.*, 320 U.S. 661, 668 (1944) (rejecting reasoning of *Leeds & Catlin Co. v. Victor Talking Machine Co. (No. 2)*, 213 U.S. 325 (1909)); *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917) (overruling *Henry v. A.B. Dick Co.*, 224 U.S. 1 (1912)).

(then codified in 35 U.S.C. § 40 (1940)), the patentee had retained sufficient ownership interest in the lens blanks to be immune to antitrust liability. *Cf. United States v. Gen. Elec. Co.*, 272 U.S. 476, 490 (1926) (patent law immunized vertical price fixing agreement between patentee and selling agents).[4] In holding that the patent law was no defense to antitrust liability in the circumstances, the Court noted "the public policy which limits the granted monopoly strictly to the terms of the statutory grant," 316 U.S. at 251 (citing *Morton Salt*, 314 U.S. at 488), and held that in the circumstances the patentee had "sold his invention so far as it is or may be embodied in that particular article" such that resale price term was outside the statutory right to "use" or to "vend." *Id.* at 251-52.

In *Mercoid Corp. v. Mid-Continent Investment Co.*, 320 U.S. 661 (1944), the Court held that § 22 of the 1870 Act did not entitle a patentee to relief against a person that sold stoker switches that were specially adapted for use in the plaintiff's patented invention, had no substantial non-infringing use, and were supplied for the purpose of inducing infringement. In reaching this controversial if not unprecedented result (once again over vigorous dissent), the Court disapproved of its earlier decision in *Leeds & Catlin Co. v. Victor Talking Machine Co. (No. 2)*, 213 U.S. 325 (1909)), where a similar claim (challenging sale of phonograph records with intent that they be combined with a claimed player apparatus) was upheld.

Each of the decisions cited above was grounded in a judicial gloss on § 22 of the 1870 Act to the effect that it "restricted" (243 U.S. at 515) a patentee's exclusive right to "use" and "vend" a claimed invention following its embodiment in a product that was

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[4] In *General Electric*, the Court established a patent law exception to what was, in 1940, a rule of *per se* illegality for vertical price fixing agreements. The scope of § 22 of the 1870 Act thus had direct antitrust liability consequences in 1940. This Court has since rejected the rule of *per se* illegality for vertical price restraints. *See Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007) (overruling *Dr. Miles Med. Co. v. John D. Park & Sons*, 220 U.S. 373 (1911)).

"vended." This "restriction" was said to be "inherent in the patent grant." *Leitch Mfg. Co. v. Barber Co.*, 302 U.S. 458, 463 (1936) (quoting *Carbice Corp. v. Am. Patents Development Corp.*, 283 U.S. 27, 33 (1931)) The Court commented that if patentees did not like the Court's interpretation of the 1870 Act, their remedy lay with "the curative power of legislation." *Boston Store of Chicago v. Am. Graphophone Co.*, 246 U.S. 8, 25-26 (1918). That is exactly what happened in 1952 and 1988.

By enacting 35 U.S.C. § 271(d)(1)-(3) in 1952, Congress legislatively overruled the *Mercoid* decision. *See Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 203 (1980) ("the 1952 Act did include significant substantive changes, and . . . § 271 was one of them."). *Dawson* upheld a patentee's right to condition use of a patented process on licensees' purchase of an unpatented chemical from the patentee and to sue for contributory infringement. *Id.* at 222-23. Section 271(d) also restored party autonomy to enter into valid and enforceable sale and license contracts of the type approved in *Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 F. 288 (6th Cir. 1896).[5]

By enacting 35 U.S.C. § 271(d)(4) and (d)(5) in 1988, Congress legislatively overruled *Motion Picture Patents* and similar decisions which had interpreted § 22 of the 1870 Act as broadly invalidating conditional sales of products embodying patented inventions. The text of § 271(d)(5) – "conditioned . . . the sale of the patented product on the acquisition of rights in another patent or purchase of a separate product" – is the exact scenario of the *Motion Picture Patents* case.

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[5] In *Heaton*, the plaintiff held a patent on a novel button setting instrument which required peculiarly configured staples. The plaintiff sold the instruments on the condition that the buyer use them only with staples supplied by the plaintiff; "In other words, they have chosen to fix the price for the right of use at the profits resulting from the sale of the staples." 77 F. at 296. Court upheld a complaint alleging contributory infringement on the part of a defendant which made and sold peculiarly shaped staples having no substantial use except to support use of the patented devices. *Id.* at 297.

In lieu of controversial federal common law or equitable remedial restrictions on patent right divisibility and party autonomy in patent-related transactions, the 1952 Patent Act and 1988 amendments placed transactions involving patents and patentable subject matter on the same or a similar footing as contracts for the sale, lease, or licensing of other forms of personal property. Such transactions may be subject to antitrust or other laws limiting the enforceability of commercial transactions, but the 1952 Act and 1988 amendments clearly require reconsideration of case law invalidating conditional sales or licenses on the basis that (i) "patents are privileges restrictive of a free economy" and (ii) "the rights which Congress has attached to them must be strictly construed so as not to derogate from the general law beyond the necessary requirements of the patent statute." *Masonite*, 316 U.S. at 280.

The significance of the 1988 amendments was recognized in *Illinois Tool Works Inc. v. Independent Ink, Inc.*, 547 U.S. 28 (2006). In that case, the Court overruled longstanding precedent and held that for purposes of antitrust law, there was no *per se* rule against conditioning the sale of a patented product (in that case patented ink jet cartridges) on the purchase of a complementary unpatented product (in that case unpatented ink) from the patentee. *Id.* at 31-32, 42-43.

The type of field of use conditions that amici incorporate in their sales contracts are much less controversial than are the type of "tie-in" sales conditions that § 271(d)(5) expressly authorizes. As set forth above, amici and their vendees use conditional sales contracts to tailor their product offerings to the specific needs, demands, and economic circumstances of different classes of customers. Selling products for "research use only," for example, is extremely common and essential to amici being able to supply products to university researchers.

The current Patent Act replaced § 22 of the 1870 Act with 35 U.S.C. § 154(a)(1), under which "[e]very patent shall contain . . . a grant to the patentee . . . of the right to exclude others from making, using, offering for sale, or selling the invention throughout the

United States. . . ." Interpreting the scope of a patentee's right "to exclude," and the extent to which a patentee may lawfully waive some but not all of its rights to exclude in a commercial transaction, can only be done in the context of the Patent Act as a whole, including 35 U.S.C. § 271(d). The 1870 Act included nothing like § 271(d). The 1870 Act also included nothing like the Bayh-Dole Act which expressly authorizes federal agencies to grant "nonexclusive, exclusive, or partially exclusive licenses under federally owned inventions, royalty-free or for royalties or other consideration," and "on such terms and conditions as the granting agency considers appropriate." 35 U.S.C. §§ 207(a)(2), 209(d).

While it remains the law that "'the right to vend is exhausted by a single, *unconditional* sale,'" *Quanta*, 553 U.S. at 626 (quoting *Motion Picture Patents*, 243 U.S. at 516) (emphasis added), the current Patent Act expressly provides that patentees may lawfully "condition[] the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a separate product." 35 U.S.C. § 271(d)(5). This provision would be rendered nugatory if, as petitioner suggests (and the government wrongly suggests in Part D of its amicus brief), a patentee's rights to exclude "using" under § 154(a)(1) were nullified or "exhausted" by conditional sales of products embodying patented inventions.

This case raises no question of whether a person who purchases a product embodying a patented invention *without notice* of a retained use or resale right may be a *bona fide purchaser* for value and take free of the retained right. *Cf.* 35 U.S.C. § 261 ("An assignment, grant or conveyance shall be void as against any subsequent purchaser or mortgagee for valuable consideration, without notice, unless it is recorded in the Patent and Trademark Office within three months from its date or prior to the date of such subsequent purchase or mortgage.").

At issue here, rather, is the enforceability of thousands upon thousands of existing contracts under which (i) a buyer receives (and pays for) only predefined rights to use and resell patented inven-

tion(s) that a purchased product embodies, and (ii) a patentee reserves the right to sue for infringement in the event that a sale condition is violated. The Court should reject petitioner's invitation to apply pre-1952 interpretations of a repealed 19th century statute as grounds for causing such enormous disruption to the nation's economy.

Congress has very broad discretion to determine what types of legislation will "promote the Progress of . . . useful Arts." U.S. Const. art I, § 8, cl. 8. *See Golan v. Holder*, 132 S. Ct. 873, 888 (2012); *Graham v. John Deere Co.*, 383 U.S. 1, 6 (1966). It would plainly frustrate Congress's intent to hold that rights under patents cannot be divided, licensed, or otherwise transferred similarly to rights in other personal property, or that any sale of a patented product operates to exhaust all patent rights in the sold product contrary to the explicit terms of sale in a commercial transaction. Such a broad concept of exhaustion is irreconcilable with the text of § 271(d)(5) and would revive case law precepts from 1917-1944 that the 1952 Patent Act was plainly designed to overrule.

Section 271(d) restores "the general rule" of "absolute freedom in the use or sale of rights under the patent laws of the United States." *Bement v. Nat'l Harrow* Co., 186 U.S. 70, 91 (1902). Under this rule, "with few exceptions" (such as those imposed on common carriers), "any conditions which are not in their very nature illegal with regard to this kind of property, imposed by the patentee and agreed to by the licensee for the right to manufacture or use or sell the article, will be upheld by the courts." *Id.*

CONCLUSION

For the reasons set forth above, the judgment below should be affirmed.

Dated: January 23, 2013

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AMICUS CURIAE BRIEF

No. 11-796

In The Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, ET AL.,

Respondents.

On Writ Of Certiorari To The United States Court Of Appeals For The Federal Circuit

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INTEREST OF *AMICI CURIAE*

The American Antitrust Institute (AAI) is an independent and nonprofit education, research, and advocacy organization devoted to advancing the role of competition in the economy, protecting consumers, and sustaining the vitality of the antitrust laws.[1] *See* www.antitrustinstitute.org. The goals of U.S. competition policy could be seriously undermined if the Federal Circuit's decision is not overturned because the court's holding expands patent rights for self-replicating technologies despite the contrary mandate of this Court's first sale doctrine and the availability of contract law to govern post-sale use restraints. The first sale doctrine allows contract law to govern post-sale restrictions on the use of products embodying patented components because contract law best reconciles the contrasting methods by which the patent and competition laws serve the complementary policy goals of fostering innovation and creating free and open markets.

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[1] The written consents of all parties to the filing of this brief have been lodged with the clerk. No counsel for a party has authored this brief in whole or in part, and no such counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person or entity other than *amici curiae* has made a monetary contribution to its preparation or submission. The AAI is managed by its Board of Directors, with the guidance of an Advisory Board that consists of over 130 prominent antitrust lawyers, law professors, economists, and business leaders. The AAI's Board of Directors alone has approved this filing for the AAI. The individual views of members of the Advisory Board may differ from the AAI's positions.

Food & Water Watch is a national, nonprofit consumer organization that works to ensure the food, water and fish we consume is safe, accessible and sustainably produced. Food & Water Watch advocates for practices and policies that will result in sustainable and secure food systems that provide healthy food for consumers and an economically viable living for family farmers and rural communities.

The National Family Farm Coalition (NFFC) represents family farm, fishing, and rural groups in 30 states. NFFC strives to empower family farmers by promoting a socially just farm and food policy. NFFC members have worked to promote food security, access to USDA programs, environmental protection, economic security, and long-term stability for family farmers and their communities.

The National Farmers Union (NFU), officially called the Farmers Educational and Cooperative Union of America, was founded in 1902. NFU is a general farm organization with a membership of nearly 300,000 farm and ranch families throughout the United States. NFU is a federation, with the presidents of the 23 state and one regional (covering three states) Farmers Union organizations serving as its board of directors. For nearly 100 years, NFU's primary goal has been to sustain and strengthen family farm and ranch agriculture. NFU believes that a vibrant agricultural sector is the foundation for strong farm and ranch families and thriving rural communities. These vibrant rural communities, in

turn, are vital to the health and economic well-being of the entire U.S. economy.

The Organization for Competitive Markets (OCM) is a national nonprofit, public policy research organization headquartered in Lincoln, Nebraska which advocates for open and competitive agriculture and retail markets. Its members are farmers and ranchers, some of whom produce natural or organic food for the natural foods industry. OCM has testified before Congress and filed *amicus* briefs on numerous competition issues.

SUMMARY OF ARGUMENT

Patent law and antitrust law pose an inherent tension. One facilitates monopoly and limits competition while the other facilitates competition and limits monopoly. Nonetheless, the two legal regimes share similar end goals. The goal of patent law is to incent innovation and the goal of antitrust law is to facilitate innovation and competition in the marketplace. Mindful of the need to balance these contrasting means to complementary ends, courts have always endeavored to construe patent law and competition law consistently. This Court provided one of the primary tools for seeking that balance and consistency over a century ago when it announced the first sale doctrine, which holds that "when the patentee . . . sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and

he parts with the right to restrict that use. The article passes . . . without the limit of the monopoly." *Adams v. Burke*, 84 U.S. 453, 456 (1873).

Patent law grants inventors only limited rights to control the distribution of products embodying their inventions. The first sale doctrine creates a bright-line rule that ensures purchasers of these works can further transfer these items without interference from the original creator. In this way, the first sale doctrine promotes an active and vibrant marketplace for works created through the benefit of the patent system and is therefore integral to reconciling our national patent and competition policy values. Absent the first sale doctrine, actual or potential interferences from the original creator would only serve to raise transaction costs and create impediments to free and open markets.

When patentees have sought to expand the scope of the patent monopoly, this Court has always refused to carve out exceptions to the first sale doctrine, including most recently in *Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617 (2008). In *Quanta* this Court overturned the Federal Circuit's judicially crafted exception to the first sale doctrine for method patents, holding instead that "[t]he authorized sale of an article that substantially embodies a patent exhausts the patent holder's rights and prevents the patent holder from invoking patent law to control postsale use of the article." *Id.* at 638.

In the case now before the Court, the Federal Circuit has repeated its error by creating an exception to the first sale doctrine for self-replicating technologies. Because the Federal Circuit has allowed a patentee to invoke patent law to control the post-sale use of self-replicating technologies, it has broken with this Court's precedent and thwarted long-standing congressional patent policy. The Federal Circuit's opinion should be overturned and post-sale use restraints on products embodying patent components should be governed by contract law, which best manages to protect the parties' interests and the public's interest in meaningful judicial review of trade restraints. The competitive dynamics of the soybean seed industry illustrate the importance of allowing contract law to play its proper role.

ARGUMENT

I. A PATENT EXHAUSTION EXCEPTION FOR SELF-REPLICATING TECHNOLOGIES IS INCONSISTENT WITH THIS COURT'S PRECEDENT AND THE COMPETITION POLICIES REFLECTED IN THE FIRST SALE DOCTRINE.

Quanta affirmed the long-recognized patent exhaustion doctrine, also known as the first sale doctrine. Citing its precedents at the intersection of antitrust and patent laws, the Court stated the first sale doctrine broadly, holding that "[t]he authorized sale of an article that substantially embodies a patent

exhausts the patent holder's rights and prevents the patent holder from invoking patent law to control postsale use of the article." *Id.* Such a broad holding does not countenance exceptions, and for reasons discussed below, the holding is particularly adverse to exceptions based on *sui generis* and statutorily non-cognizable categories of technology. By carving out such an exception for self-replicating technologies, the Federal Circuit has contravened this Court's clear and unqualified precedent.

A. The Federal Circuit Improperly Created an Exception to the First Sale Doctrine for Self-Replicating Technologies.

Although the Federal Circuit states that the first sale doctrine is "inapplicable" to this case, *Monsanto Co. v. Bowman*, 657 F.3d 1341, 1347 (Fed. Cir. 2011) (citing *Monsanto Co. v. Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006) and *Monsanto Co. v. McFarling*, 302 F.3d 1291 (Fed. Cir. 2002)), the court's holding invariably creates, *sub silentio*, an exception to the first sale doctrine for self-replicating technologies. To be sure, this Court has held that *licensing* an article that substantially embodies a patent does not prevent the patent holder from invoking patent law to control the use of the article beyond the scope of the license.[2]

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[2] *Amici* agree with the petitioner that any suggestion that Monsanto's disposition of seed is a license and not a sale lacks merit. A "license" or "opportunity" to "*purchase*" is a sale. *See* Brief

(Continued on following page)

See, e.g., *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476 (1964) (remaking convertible tops exceeded scope of licensed use). Likewise, any conveyance of the right to use an article that substantially embodies a patent – whether by license or sale – does not limit the patent holder's right to invoke patent law to control the subsequent *reconstruction* of the article or the patented component. *See Jazz Photo Corp. v. ITC*, 264 F.3d 1094 (Fed. Cir. 2001). However, this Court has always held unequivocally that "[t]he authorized *sale* of an article that substantially embodies a patent . . . prevents the patent holder from invoking *patent law* to control postsale *use* of the article." *Quanta*, 553 U.S. at 638 (emphases added). In construing the first sale doctrine, this Court has never held otherwise.

Notwithstanding this Court's clear precedent, the Federal Circuit's holding in *Bowman* inevitably permits Monsanto to invoke patent law to restrict the post-sale use of seeds that substantially embody

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for Petitioner Vernon Hugh Bowman at 31, Bowman v. Monsanto Co., No. 11-796 (Dec. 3, 2012). To conclude otherwise would be to "distort contract law beyond recognition. . . . [T]he approach allows a patentee to use labels . . . to take what a buyer would reasonably think was an unrestricted sale and convert it, after the sale, to a restrictive license." Mark R. Patterson, *Must Licenses Be Contracts? Consent and Notice in Intellectual Property Law*, 40 Fla. St. U. L. Rev. ___ (forthcoming Feb. 2013), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2009934.

Monsanto's '605 and '247E patents after an unconditional sale of those seeds to farmers.[3] The '605 and '247E patents read on a type of gene and a type of synthase, respectively.[4] *Bowman*, 657 F.3d at 1343-44. A gene is a molecular unit of heredity, and a synthase is an enzyme that catalyzes the synthesis of a substance. It is uncontested that Roundup Ready® (RR or RR1) seeds substantially embody the patented gene and the patented synthase (hereinafter "genetic material" or "gene strain"), *see* Brief of Respondents Monsanto Co., et al. at 1-7, Bowman v. Monsanto Co., No. 11-796 (Feb. 27, 2012) (referring repeatedly to "seed *containing* Monsanto's technology" (emphasis added)), as well as a multitude of other genes, enzymes and matter intrinsic to soybean seeds generally. Likewise, it is uncontested that Monsanto transfers its seed and the underlying patented technology to growers without restrictions on their rights to subsequently re-sell

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[3] The Federal Circuit found, and the parties do not dispute, that purchasers of Monsanto's Roundup Ready seed acquire authorization (without restriction) to subsequently re-sell progeny seed to grain elevators as a commodity. *Bowman*, 657 F.3d at 1345 (quoting Monsanto appellate brief describing explicit authorization "*to sell . . . as a commodity*") (emphasis in original).

[4] In describing "representative claims" of the 247E patent, the court emphasized claims on "a plant" and "a seed of the plant" to illustrate "breadth of coverage," *Bowman*, 657 F.3d at 1344, but the court did not observe that these claims are dependent claims, *see id.*, and therefore *limit* the scope of the claims to which they refer. *See* Manual of Patent Examining Procedure, 37 CFR § 1.75(c) ("One or more claims may be presented in dependent form, referring back to and further limiting another claim or claims in the same application.").

the progeny seed to grain elevators as a commodity. *See supra* note 2; *Bowman*, 657 F.3d at 1345 (quoting concessions at oral argument by Monsanto's counsel and concluding that this is the "only permissible reading of the Technology Agreement").

Insofar as the Federal Circuit has held that self-replicating RR seeds purchased from grain elevators cannot be used for planting without also infringing on the patented gene and synthase,[5] *a fortiori* it has held that the authorized sale of self-replicating RR seeds that substantially embody Monsanto's '605 and '247E patents *does not* prevent Monsanto from invoking *patent law* to control the *post-sale use* of self-replicating RR seeds. Although the parties may dispute whether planting seed is also tantamount to "making" new seed – *amici* believe it is not – there is no dispute that planting constitutes "use." *See* Brief of Respondents at 11, ("To be sure, when a farmer plants soybean seed to create a new crop of soybeans, he *uses* the seeds. . . .") (emphasis added). Accordingly, the Federal Circuit's holding directly conflicts with the first sale doctrine that this Court has repeatedly affirmed, including most recently in *Quanta*. The Federal Circuit has not avoided the first sale doctrine but rather has created an exception to the doctrine for self-replicating soybean seeds. By its terms the

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[5] *See Bowman*, 657 F.3d at 1347 ("[O]nce a grower, like Bowman, *plants* the commodity seeds containing Monsanto's [RR] technology *and the next generation of seed develops*, the grower has created a newly infringing article.") (emphases added).

holding extends to any self-replicating technology. *See also Scruggs*, 459 F.3d at 1336. As discussed below, the Federal Circuit has repeated the same error it made in its *Quanta* decision, reversed by this Court.

B. This Court in *Quanta* Correctly Rejected Limitations on the First Sale Doctrine for Products Embodying Transitive Patented Technology.

The Federal Circuit's holding in *Bowman* closely parallels its holding in *Quanta*, which this Court reversed. Although *Quanta* concerned patented computer technology and *Bowman* patented gene technology, in both cases the Federal Circuit created an exception to the first sale doctrine owing to the transitive nature of the patented technology embodied in the product sold. In *Quanta*, the Federal Circuit was concerned with the effect on the patentee of downstream re-use of repeatable patented methods after an authorized sale, *see LG Elecs., Inc. v. Bizcom Elecs., Inc.*, 453 F.3d 1364, 1370 (Fed. Cir. 2006), and here the court was concerned with the effect on the patentee of downstream re-use of replicable patented genetic matter after an authorized sale, *see Bowman*, 657 F.3d at 1347-48. In deciding *Bowman*, the court repeated the reasoning that "[a]pplying the first sale doctrine to subsequent generations of self-replicating technology would eviscerate the rights of the patent holder." *Id.* at 1347 (citing *Scruggs*, 459 F.3d at 1336).

This Court's *Quanta* decision expressly overruled the Federal Circuit's *Quanta* decision and flatly rejected an exception to the first sale doctrine for repeatable process or method claims because "the primary purpose of our patent laws is not the creation of private fortunes for the owners of patents but is to promote the progress of science and useful arts." *Quanta*, 553 U.S. at 626 (internal quotation omitted). An exception for process or method claims "would violate the longstanding principle that, when a patented item is 'once lawfully made and sold, there is no restriction on [its] use to be implied for the benefit of the patentee.'" *Id.* at 624 (citing *Adams v. Burke*, 17 Wall. 453, 457 (1873)); *see also Ethyl Gasoline Corp. v. United States*, 309 U.S. 436 (1940) (finding exhaustion of process patent). This Court based its reversal of the Federal Circuit in *Quanta* on the principle that the first sale doctrine is broad enough to encompass all types of technologies covered by patents, whether process or product, replicable or non-replicable.

C. The Federal Circuit Ignored Precedent and Used Faulty Logic to Distinguish *Quanta*.

In creating an exception to the first sale doctrine for the *sui generis* category of self-replicating technologies, the Federal Circuit ignored precedent and relied on faulty logic in attempting to distinguish *Quanta*. First, the court held that planting was not the only reasonable and intended use of the seed, and therefore commodity seed does not substantially

embody second and later generations of seed. The court suggested other uses of commodity seed, including as animal feed. Second, the court characterized the reproduction from the seed of a new plant as a "making" of a new article, infringing the patent owner's right to exclude others from making the patented invention. Consequently, the court rejected the exhaustion argument because the patented technology reproduces when the seed reproduces. The application of the patent exhaustion doctrine to such a technology, the Federal Circuit concluded, would eviscerate patent rights over such technology.

The Federal Circuit first erred by relying on alternative uses for 'commodity RR' seed, including as feed, to conclude that planting is not the "only reasonable and intended use" of such seed. *Bowman*, 657 F.3d at 1348. The existence of alternative non-infringing uses for 'commodity RR' seed beyond planting is irrelevant because "*Univis* teaches that the question is whether the product is capable of use only in *practicing the patent*, not whether those uses are infringing." *Quanta*, 553 U.S. at 631, n.6 (emphasis added) (internal quotation omitted); *see U.S. v. Univis Lens Co.*, 316 U.S. 241, 249 (1940) (holding that the only reasonable and intended use of patented lens blanks was for inclusion in fitted lenses notwithstanding that lens blanks can be put to non-infringing uses as replacement parts, for sale overseas, or for recycling).

A seed does not have to grow into a plant and resist actual glyphosate applications to practice the

patent on a genetic trait for glyphosate resistance any more than a Timex wristwatch must actually use a Timex patent on a system for displaying LCD "hands" in order to practice that patent. *See* U.S. Patent No. RE31,872 (filed April 23, 1985). For example, suppose that a wristwatch embodying that patent had two display modes, one that displayed analog "hands" using the patented system and another that displayed the time digitally, without using the patented system. A sale of a wristwatch embodying the patent would exhaust the patentee's rights even if a user could choose to operate it only in the digital mode. Patents that are completely embodied by products are fully capable of being practiced *within* those products. A *genetic trait* is practiced within a seed when the seed simply *exhibits* the trait.

The court here hardly needed to scour the record, *see Bowman*, 657 F.3d at 1348, to conclude that a product containing patented genetic material will completely embody the patent and inevitably practice the patent. Whether it is being planted or fed to livestock, the use of Monsanto seed practices the Monsanto patents asserted in this case. The court erred by looking to the *non-infringing* uses of the seed rather than to the possibility of making any use of the seed without *practicing the patents* on the *genetic trait*. *Quanta*, 553 U.S. at 631, n.6. There is no such possibility. In any reasonable and intended use of seeds containing Monsanto's patented gene strain, the seeds will exhibit the genetic trait for glyphosate resistance.

If the court's confusion was not clarified by *Univis*, it should have been clarified by *Quanta*. The gene strain is like the LGE patents in *Quanta*, and the seed is like the microprocessor. "Whether outside the country or functioning as replacement parts, the Intel Products [in *Quanta*] would still be *practicing* the patent, even if not infringing it. And since the features partially practicing the patent are what must have an alternative use, suggesting that they be disabled is no solution. The disabled features would have no real *use*." *Quanta*, 553 U.S. at 631, n.6 (emphases in original). Any reasonable and intended use of 'commodity RR' seed will involve exhibiting the genetic trait for glyphosate resistance. Even if the patented gene strain could be disabled from the seed and the seed put to other, non-infringing uses, the disabled features of the seed that *practice the patent*, like the disabled features in *Univis* and *Quanta*, "would have no real use." *Id.*

The Federal Circuit also erred in cursorily and summarily resolving an extremely difficult and complex philosophical question central to its infringement determination. The court simply declared that "[w]hile farmers, like Bowman, may have the right to use commodity seeds as feed, or for any other conceivable use, they cannot 'replicate' Monsanto's patented technology by planting it in the ground to create newly infringing genetic material, seeds, and plants." *Bowman*, 657 F.3d at 1348. This conclusion is problematic for several reasons. First, the court contradicts itself by its own terms. Throughout the opinion

it refers to Monsanto's technology as "self-replicating," but here it holds that "*farmers* . . . 'replicate' Monsanto's patented technology by planting it in the ground." *Id.* (emphasis added). The court is unclear as to whether seeds "self-replicate" on their own or farmers cause seeds to replicate. The distinction, or at least the answer to the question whether such a distinction exists, seems relevant to whether the *farmer* has violated the patent holder's right to "make" the patented invention.

Likewise, the Federal Circuit failed to consider factual analogues in other industries, including the computer software industry, that portend dangerous unintended consequences flowing from its infringement determination. When a disk containing a patented software program is purchased and uploaded to a computer, the computer must replicate the software in order to run it. Under the Federal Circuit's holding, disks containing software seemingly would be incapable of use without also violating the patent holder's right to "make" the patented software, and millions of computer software users seemingly could be liable for patent infringement. The court does not explain or justify its conclusions on the relationship between infringement and human agency; it merely rests upon observing that a process resulting in replication was set in motion. As discussed below, the complexity of these problems helps illustrate why Congress is better suited to create exceptions to the Patent Act.

II. THE FEDERAL CIRCUIT'S HOLDING UNJUSTIFIABLY DEPARTS FROM LONGSTANDING CONGRESSIONAL PATENT POLICY.

The Federal Circuit's exception to the first sale doctrine for self-replicating technologies is inconsistent with Congress' commitment to broad technology- and industry-neutral patent laws dating back at least to the enactment of the 1952 Patent Act.[6] Just two years ago, this Court affirmed the broad applicability of patent law across technologies in *Bilski v. Kappos*, 130 S. Ct. 3218 (2010), rejecting a categorical exclusion for business method patents and declining "to impose limitations on the Patent Act that are inconsistent with the Act's text." *Id.* at 3231.

Lower courts "must hesitate before departing from established general legal rules lest a new protective rule that seems to suit the needs of one field produce unforeseen results in another." *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct.

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[6] The United States is also committed to a technology-neutral view of patent law by the multilateral TRIPS Agreement, which the United States signed in 1994. *See* Agreement on Trade-Related Aspects of Intellectual Property Rights, art. 27(1), Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, The Legal Texts: The Results of the Uruguay Round of Multilateral Trade Negotiations 320 (1999), 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994) [hereinafter TRIPS]. Among other things, TRIPS obliges sovereign signatories to ensure that "patents shall be available and patent rights be enjoyable without discrimination as to . . . the field of technology." *See id.*

1289, 1305 (2012). "And [courts] must recognize the role of Congress in crafting more finely tailored rules where necessary." *Id.* When Congress creates technology-based exceptions to the Patent Act that are analogous to the exception for self-replicating technologies created by the Federal Circuit, it does so only after careful deliberation. For example, through Section 273, Congress enacted the defense of prior user rights for business method patents. *See* 35 U.S.C. § 273 (2010). This defense has been expanded without field limitations in the America Invents Act. *See* Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 5, 125 Stat. 284, 292 (2011). Similarly, with respect to surgical methods, Congress has enacted Section 287(c), which prevents infringement suits against medical practitioners based on surgical method patents. *See* 35 U.S.C. § 287(c) (2004).

Two important considerations flow from this Court's jurisprudence and the legislative development of the Patent Act. First, it is manifest that the enactment of limitations to patent law based on field of technology is an extraordinary step that has been the domain of Congress, not the judiciary. Second, when Congress creates such limitations, they have been narrow and exceptional. Congress has never created an exception for "self-replicating technologies," and the term does not even appear in the Patent Act. The Federal Circuit's ruling on self-replicating technologies and the patent exhaustion doctrine is therefore unprecedented and "would . . . engraft a limitation

upon the right of use not contemplated by the statute." *Adams*, 84 U.S. at 456 (1873).

III. THE FEDERAL CIRCUIT'S DISCRIMINATORY STANDARD FOR SELF-REPLICATING TECHNOLOGIES IGNORES THIS COURT'S PRECEDENT ON THE PATENT MISUSE DOCTRINE BY EXPANDING THE SCOPE OF MONSANTO'S PATENT.

By imposing a discriminatory patent standard for self-replicating technologies, the Federal Circuit also ignores this Court's precedent on the patent misuse doctrine by extending Monsanto's statutory patent rights. In recognition that uniform rules concerning the scope of patent grants are essential to non-discrimination, this Court has relied on the patent misuse doctrine to set reasonable boundaries for the exercise of patent rights. In *Motion Picture Patents*, the Court explained that "the scope of the grant which may be made to an inventor in a patent, pursuant to the [patent] statute, must be limited to the invention described in the claims of his patent. . . ." *Motion Picture Patents Co. v. Universal Film Co.*, 243 U.S. 502, 511 (1917). The patent misuse doctrine prevents a patentee from "control[ling] conduct . . . not embraced by the patent monopoly." *Ethyl*, 309 U.S. at 456; *see also Illinois Tool Works Inc. v. Independent Ink, Inc.*, 547 U.S. 28, 31 (2006) (discussing background of patent misuse doctrine).

The Federal Circuit's exception to the first sale doctrine for self-replicating technologies expands the

scope of Monsanto's patent rights. Monsanto's patents cover a chimeric gene sequence that exhibits resistance to glyphosate, a principal ingredient in herbicide to control weed growth. This recombinant gene sequence is only one component introduced into the seeds that Monsanto sold to Bowman. The Federal Circuit's holding allows the owner of a patent in a single component of a self-reproducing seed to prevent use of all the other components.[7] In other words, the court's ruling allows Monsanto to expand its patent over one element to cover the entire seed. Moreover, because self-replicating technologies are exempt from the first sale doctrine under the court's holding, the patent holder is able to prevent the use of the *reproductive capacity* of a seed even though the patented invention does not include the seed's naturally occurring reproductive mechanisms. Allowing Monsanto to control seed reproduction sets the perplexing precedent of allowing a patentee to control a defining characteristic of life. *See* Bruce Alberts et al., Molecular Biology of the Cell 1 (Fifth ed. 2008).

By one estimation there are over 46,000 other genes in a soybean, none of which are patented by Monsanto. *See* Jeremy Schmutz et al., *Genome Sequence of the Palaeopolyploid Soybean*, 463 Nature 178, 178 (Jan. 14, 2010), *available at* http://www.nature.com/nature/journal/v463/n7278/pdf/nature08670.pdf (sequencing soybean genome and predicting "46,430 protein-coding genes").

IV. CONTRACT LAW PROVIDES A BALANCED MEANS OF PROTECTING THE PARTIES' INTERESTS AND THE PUBLIC INTEREST.

As described *infra* Section IV.C., the Federal Circuit's invocation of patent law to control the post-sale use of self-replicating technologies is very likely to harm market competition. In contrast, contract law governs post-sale use restrictions, consistent with the first sale doctrine, while fully protecting the legitimate interests of the parties and encouraging efficient markets. The goal of patent law is to incent innovation and the goal of competition law is to facilitate innovation and competition in the marketplace, but the laws require a careful balancing because they use contrasting means to achieve these complementary ends. The patent exhaustion and patent misuse doctrines reflect the recognition that courts must endeavor to construe patent law and competition law consistently.[8] Allowing contract rather than patent law to govern post-sale use restrictions on self-replicating technologies furthers this goal by discouraging anticompetitive exploitation of the patent grant and permitting meaningful judicial review of unduly anticompetitive exploitations. The facts of this case

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[8] *See* Shubha Ghosh, *Carte Blanche*, Quanta, *and Competition Policy*, 34 J. of Corp. L. 1209, 1210 (2009) ("[I]ntellectual property doctrine is informed by norms of competition. . . . [I]ntellectual property law operates as competition policy. . . . [T]he goal is to construct a coherent body of competition policy that includes both intellectual property and antitrust laws.").

illustrate that this meaningful review is essential. Contract law best serves the public interest and fully protects the legitimate interests of the parties.

A. Courts Construe Patent Law Consistent with U.S. Competition Policy.

Courts have a long history of crediting competition policy concerns when confronted with overreaching by private actors who wield public grants of the right to exploit markets. *See, e.g.*, *Quanta*, 553 U.S. at 630 (illustrating "the danger of allowing an end-run around [patent] exhaustion"); *Ethyl*, 309 U.S. at 459 (rejecting patent-based assertions of freedom from antitrust oversight and striking down unreasonable restraints "not used as a means of stimulating the commercial development . . . of the patented invention . . . but [rather] for . . . the exploitation of . . . monopoly not embraced in the [patent]"); *Univis Lens Co.*, 316 U.S. at 241 (rejecting the use of patent claims to shield a vertical cartel from antitrust review and focusing instead on the competitive effects of contracts at issue). Courts balance the justifications for the rights created by public grants with the broader public interest embedded in the Commerce Clause in a free and open national market, and they avoid adding to those rights when the legislature has not expressly done so. *See Chicago Prof'l Sports Ltd. P'ship v. Nat'l Basketball Ass'n*, 961 F.2d 667, 672 (7th Cir. 1992) (Easterbrook, J) ("[C]ourts [should] read exceptions to the antitrust law narrowly, with beady eyes and green eyeshades.").

This treatment has long since extended to legislative grants of property rights because of the enduring recognition that such grants pose manifest risks to the efficient workings of the market and vital dynamics of innovation. *See The Proprietors of the Charles River Bridge v. The Proprietors of the Warren Bridge*, 36 U.S. 420, 551-52 (1837) (specifically acknowledging that legislative grants of property rights are not to be unduly protected from market forces). *Charles River Bridge* recognized the "rule of construction" that "any ambiguity in the terms of [a statute] . . . must operate . . . in favor of the public, and the plaintiffs can claim nothing that is not clearly given them by the act." *Id.* at 544 (quoting *Proprietors of the Stourbridge Canal v. Wheeley & Others*, 2 B. & Ad. 793).

The Federal Circuit gave short shrift to these fundamental considerations when it grafted new patent rights onto the Patent Act allowing for perpetual control of patented self-replicating technologies. The court failed to adequately consider, for example, the new rule's impact on the market behavior of subsequent processors of commodity soybeans. It also failed to consider what rights subsequent processors possess and under what circumstances the patent holder can demand further royalties or obtain an injunction against the buyer retaining or using the commodity.

The omission of these considerations from the Federal Circuit's analysis illustrates the shortcomings of

statutory amendment by judicial fiat as compared to congressional action. *See supra* Section II. In Congress, new laws emerge after an extensive deliberative process and can be crafted to employ complex statutory schemes that sufficiently balance myriad stakeholder interests. The Federal Circuit did not credit or even observe the manifold dangers of coercion and opportunistic conduct, or even the risk of unintended consequences for competition, associated with such a broad, unreviewable new patent right. Such concerns should have counseled strongly against the right's creation, or at least in favor of significant constraints on the application and use of the new powers conferred. *See Charles River Bridge*, 36 U.S. at 544. For these reasons, Congress would be better suited to determine the proper scope of patent rights in self-replicating technologies. The role of the courts should be to ensure that possessors of patent rights continue to enjoy the exclusive right to make, use, and sell (or not sell) their property, but "nothing more that is not clearly given them" by the Patent Act. *Id.*

B. The Public Interest is Best Served by Allowing Contract Rather than Patent Law to Govern Post-Sale Use Restrictions on Products Embodying Patented Components Because Contract Law Enables Meaningful Judicial Review of Patent-Based Restraints.

The public interest is best served by allowing contract rather than patent law to govern factual

circumstances like those in *Bowman* because contract law affords parties flexibility to draft agreements that maximize their mutual economic objectives while preserving a critically important role for judicial review of patent-based restraints of trade. *Amici* submit that patent holders and their customers should be able to craft context-specific agreements concerning post-sale restrictions on the use of products substantially embodying a patented component, but subject to time honored rules. Contract law expressly limits, for example, the scope of the parties' rights to enter into restraints on each other's competitive freedom, *see* Restatement (Second) of Contracts § 187 (1981) (a contract that only restrains trade is unreasonable), but it also affords due respect to an intellectual property owner's interest in protecting its intellectual property, and to the public interest, *see id.* § 188 (ancillary restraints are unreasonable only if in excess of the "promisee's legitimate interest" or when the restraint imposes an undue hardship on the promisor and injury to the public).

Contracts that impose unreasonable restraints on competition also are directly subject to Section 1 of the Sherman Act, 15 U.S.C. § 1 (2004). Antitrust law exists for the explicit purpose of implementing the Commerce Clause's commitment to the market. It affords a way to balance the rights of commercial actors to engage in legitimate contracting with the need to retain a workably competitive market. It is the "Magna Carta of free enterprise." *United States v. Topco Assocs., Inc.*, 405 U.S. 596, 610 (1972).

Antitrust review of restrictive contracts builds on a well-developed methodology and a substantial history of application in a wide variety of contexts. This allows lower courts to comfortably apply antitrust standards with confidence and consistency. In the patent context, reviewing courts can be guided by the patent holder's right to impose downstream restraints that reasonably protect its legitimate interest in exploiting its patent rights. Given such a definition of the legitimate interest of the patent holder, it is possible to define in a consistent way when the restraint is "unnecessarily restrictive." *See Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 605 (1985); *United States v. Addyston Pipe & Steel Co.*, 85 F. 271, 282 (6th Cir. 1898), *aff'd as modified*, 175 U.S. 211 (1899) ("The main purpose of the contract suggests the measure of protection needed, and furnishes a sufficiently uniform standard by which the validity of such restraints may be judicially determined.").

As antitrust law has moved away from broad, mechanical, per se rules and toward a more flexible rule of reason, *see, e.g.*, *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007) (rejecting the per se rule of resale price maintenance); *Broadcast Music, Inc. v. Columbia Broadcasting Sys., Inc.*, 441 U.S. 1 (1979) (not every horizontal price fix is per se illegal), it has become even more able to provide nuanced review of specific restrictive agreements. *See, e.g.*, *United States v. Visa U.S.A., Inc.*, 344 F.3d 229, 238 (2d Cir. 2003) (conducting focused inquiry

into joint venture and assessing whether challenged restraint is reasonably necessary to achieve defendants' procompetitive justifications or whether they may be achieved through less restrictive means); *see also Aspen Skiing Co.*, 472 U.S. at 605 (restraints are unlawful when they have "impaired competition in an unnecessarily restrictive way"). The use of contract law and its attendant antitrust standards to govern post-sale use restrictions on products embodying patented components therefore allows for a flexible, predictable, and well-established framework of judicial review.

Conversely, if patent law is expanded to govern post-sale use restrictions on products embodying patented components, virtually any restraint of trade is an inherent right of the patent holder and unreviewable for undue anticompetitive effect. The Federal Circuit has made it clear that when a patent or copyright holder acts within the scope of the rights conferred by the patent or copyright law, such conduct is exempt from any antitrust review. *See CSU, L.L.C. v. Xerox Corp.*, 203 F.3d 1322 (Fed. Cir. 2000); *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346 (Fed. Cir. 1999). The implication of this doctrine is that once any exclusionary or anticompetitive act is within the scope of a patent's inherent rights, it is per se legal as a matter of antitrust law.

Indeed, in *McFarling*, *Scruggs*, and now *Bowman*, the Federal Circuit's creation of an expanded right in the patented component of self-replicating soybean seeds has foreclosed the ability of the courts to look

critically at the reasonableness of Monsanto's restraints on replanting. The plaintiffs in *McFarling* and *Scruggs* directly challenged the reasonableness of those restraints and argued that there were less anti-competitive ways for Monsanto to protect any legitimate interest in earning a royalty on soybeans that farmers saved and replanted. The Federal Circuit had no need to consider these arguments because it chose instead to grant Monsanto an absolute right to control the future use of self-replicating soybeans that contain its chimeric gene strain. The Federal Circuit's approach forecloses an important means of overseeing the merits of specific uses of the exclusionary rights of patent holders. *Quanta*, *Ethyl* and *Univis* forcefully illustrate the wisdom of requiring instead that post-sale restraints be contractual in character so that their competitive merits can be evaluated.

C. The Value of Critical Review Is Evident Here, Where Post-Sale Use Restrictions May Lead to Substantial Anti-competitive Effects Without Offsetting Pro-Competitive Effects That Could Not Be Achieved Through Less Restrictive Means.

Bowman underscores the inferiority of the Federal Circuit's approach as compared to a contract law approach because the court's holding would foreclose

any antitrust review of restrictive conduct by a likely monopolist.[9] Because the court characterized Monsanto's right to control post-sale use of self-replicating soybean seeds after an authorized sale as an inherent, patent-based right, it would be prevented from considering the consequences of the economic outcome rendered by its decision. As discussed below, such consequences include potential anticompetitive effects in both the seed and genetic traits markets that may prove very difficult to justify using standard antitrust efficiencies defenses.

As recently as 1997, saved seed constituted approximately 20% of planting in soybeans, constraining the pricing freedom of new seed producers accordingly. *See* Michael Mascarenhas & Lawrence Bush, *Seeds of Change: Intellectual Property Rights, Genetically Modified Soybeans, and Seed Saving in the United States*, 46 Sociologia Ruralis 122, 129 (2006) (Figure 1 is a chart depicting data compiled by U.S. Department of Agriculture and Doane Agricultural

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[9] In 2008, Monsanto reportedly enjoyed a 97% share of the market in genetic traits for herbicide-tolerant soybeans. *See* Diana L. Moss, *Transgenic Seed Platforms: Competition Between a Rock and a Hard Place?*, American Antitrust Institute, 5 (Oct. 23, 2009), *available at* http://www.antitrustinstitute.org/~antitrust/sites/default/files/Addendum%20to%20AAI%20White%20Paper_Transgenic%20Seed.4.5_040520101107.pdf (citing data provided at Monsanto investor presentation). In the same year, Monsanto reportedly enjoyed about a 65% share in the market for traited soybeans. *Id.* at 8. Dominance of this sort raises questions as to whether farmers have access to a workably competitive market in soybean seeds.

Services); *see also* Jorge Fernandez-Cornejo, *The Seed Industry in U.S. Agriculture*, U.S. Dep't of Agric., Econ. Research Serv., Agric. Info. Bulletin No. 786, Jan. 2004. If allowed to stand, the Federal Circuit's exception to the first sale doctrine likely will chill or altogether eliminate competition from commodity seed. Notwithstanding that a given bag of commodity seed actually may contain only a little RR seed or none at all, a purchaser intending to plant, save, and reuse commodity seed[10] will no longer be able to do so unless the purchaser is willing to incur the risk of infringement liability or undertake costly mitigating measures. Whether a commodity seed purchaser's added costs flow from infringement liability itself, the expense associated with seed sorting (whether incurred directly by farmers or passed on to farmers by grain elevators), or self-imposed seed-saving restrictions on commodity seed, the net effect is to increase the price of the product to the farmer or to devalue the product sold by the grain elevator. This loss of competitive discipline from commodity seed is

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[10] Although it is true that commodity seed has other uses, such as for animal feed, farmers use commodity seed to plant second crops. Farmers usually want to use less expensive seed for second crops because of the greater risk that the crop will not be successful. Before the Federal Circuit's decision, buying run of the mill soybeans from an elevator was a good solution because the commodity price is much lower than the price of certified seed and would be lower even if the buyer had paid a royalty equivalent to Monsanto's royalty on certified seed.

magnified by the fact that Monsanto has a substantial market share in the certified seed market.[11]

The troubling potential anticompetitive effects of the Federal Circuit's decision also may extend upstream to the market for genetic traits. Monsanto's seed-saving restrictions can create incentives for rival genetic traits developers and seed companies to "standardize" on the Monsanto RR soybean system because Monsanto's policing of its system ensures recurring annual sales. This incentive, coupled with the ubiquity of the Monsanto RR trait, may dampen the ability and incentive for rivals to compete hard to create rival soybean systems. Because the use of commodity seed containing RR traits to grow soybean plants that beget second generation seeds containing RR traits infringes the patentee's right to "make" the seed under the Federal Circuit's holding, *Bowman*'s effect on commodity seed will be very similar to the effect of a seed-saving restriction on commodity seed. The overall impact likely would be to chill innovation and competition in the market for genetic traits in addition to the market for seed.

The foregoing scenarios also may cause further collateral damage to competition by enhancing Monsanto's market power. If Monsanto's share of the market for herbicide tolerant soybean traits allows it to dictate the terms of rivals' access to Monsanto traits for the purpose of developing plant varieties

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[11] *See supra* note 10 and accompanying text.

that combine or "stack" various genetic traits, Monsanto's technology licensing practices are likely to have increasingly greater influence in shaping or controlling the evolution of competition in the market. To the extent that rival herbicide-tolerant genetic trait modifications are able to come to market, the number of patent holders with a near veto power over the business of the grain elevators would only multiply. Under the Federal Circuit's holding in *Bowman*, each patent holder can effectively raise costs on any sale that might affect its continuing patent right.

Although Monsanto's current patent on the genetic technology used in RR seeds expires in 2014, expiration seems unlikely to ameliorate the potential anticompetitive effects of the Federal Circuit's holding because Monsanto has patented a second version of the RR genetic technology known as "Roundup Ready 2" (RR2). *See, e.g.*, U.S. Patent No. RE39,247 (filed Jul. 18, 2003). If Monsanto's existing contractual seed-saving restrictions, coupled with the Federal Circuit's new exception to the first sale doctrine for self-replicating technologies, simply migrate to RR2, there is little evidence to suggest a meaningfully different competitive outcome. Because Monsanto would maintain its current ability to control access to the technology, agricultural biotechnology innovators may continue to experience difficulty in developing "generic RR1" to generate competition.

The foregoing merely describes some of the potential anticompetitive uses of judicially expanded patent rights in the seed industry. The Federal

Circuit's holding could have still greater effects in other industries because of its extension to any self-replicating technology.[12] A contract approach would not foreclose meaningful review of anticompetitive practices that are more intrusive in the market than necessary to protect the patent holder's legitimate interests.

D. The Parties Are Fully Capable of Protecting Their Interests Using Contract Provisions, Without A Court's Resorting to Discriminatory Application of Patent Law.

Patent holders of self-replicating patented technologies might have a better claim to special protections if application of the first sale doctrine truly "would eviscerate the rights of the patent holder," *Bowman*, 657 F.3d at 1347 (quoting *Scruggs*, 459 F.3d at 1336). However, the court's conclusion is erroneous because it ignores ordinary business responses and protections available outside the patent law. If the patent holder is concerned with the price competition created by the second generation of the replicating technology, for example, one business response is to charge a higher price for the first generation

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[12] *See* Brief for the United States as Amicus Curiae at 19-20, Bowman v. Monsanto Co., No. 11-796 (August 24, 2012) (identifying other industries that rely on technologies with self-replicating features, including man-made cell lines, DNA molecules, nanotechnologies, and organic computers).

upfront.[13] Another response would be to contract with the purchaser to require payment when the self-replicating technology is saved and reused.

If the patent holder is concerned with the proliferation of a readily replicable invention, a lesson is available from the software industry, which engages in effective product differentiation and efficient third degree price discrimination. The threat of replicability is arguably greater for software than soybean seeds because an entire suite of users can be satisfied with one disk containing the program. Whereas an individual soybean plant can produce only a limited number of replica seeds in the course of a harvest, software is replicable without limit almost instantaneously. Nonetheless, the first sale doctrine has been recognized for the sale of software. *See, e.g., Vernor v. Autodesk*, 621 F.3d 1102 (9th Cir. 2010).

Monsanto has always maintained an ability to protect its interests without a judicial expansion of its patent rights. From the beginning, it could have abstained from using its technology to create the glyphosate tolerant soybean seed or other inbred seed lines and instead confined its applications to hybrid seeds that do not produce true copies of themselves. It also could have developed its "terminator" gene,

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[13] This practice would parallel that of book publishers who sell expensive first editions of books knowing that there will be competition from used versions of the book in the future. *See Bobbs-Merrill v. Straus*, 210 U.S. 339 (1908) (establishing first sale doctrine in copyright for book publishing).

which would have rendered progeny seeds sterile. *See* Robert B. Shapiro, *Open Letter From Monsanto CEO Robert B. Shapiro To Rockefeller Foundation President Gordon Conway and Others* (Oct. 4, 1999), *available at* http://www.monsanto.com/newsviews/Pages/monsanto-ceo-to-rockefeller-foundation-president-gordon-conway-terminator-technology.aspx (voluntarily committing not to commercialize sterile seed technologies in response to public concerns but noting that "Monsanto holds patents on technological approaches to gene protection that do not render seeds sterile . . . ").

Monsanto likely chose to license its technology to other seed companies and to sell it to farmers with limitations on what uses the farmers can make of progeny seeds (1) because this approach allowed the company to profit greatly from its invention and (2) because it is fully capable of protecting its rights using contract law. Indeed, Monsanto's Associate General Counsel effectively conceded as much in a recent article describing the company's plans to transition to a contract-based regime when its patents expire. *See* J. Thomas Carrato & Brandon W. Neuschafer, *From Proprietary to Generic: A Private Contractual Mechanism for Biotech Seed Products*, Wash. Legal Found'n Legal Backgrounder (Nov. 2, 2012), *available at* http://www.wlf.org/upload/legalstudies/legalbackgrounder/11-2-12Carrato_LegalBackgrounder.pdf (describing "a private, contract-based mechanism to address the transition from a patent-protected to a generic marketplace" and maintaining that the mechanism can successfully fill the voids created by the transition).

E. Contract Remedies Protect Competition and Innovation Incentives Better than Patent Remedies.

Finally, a contract law approach is also superior to the Federal Circuit approach because it provides a fully sufficient set of remedies that balance the interests in competition, innovation, and the legitimate property interests of both parties. Contract damages generally are governed by rules that look to the actual loss of the other party resulting from a breach of the contract. Increasingly in patent litigation, damages may be tied to less reliable claims of lost gains. *See, e.g., Monsanto Co. v. Ralph*, 382 F.3d 1374, 1379 (Fed. Cir. 2004) (affirming speculative amount far in excess of Monsanto's standard per-bag license fee as the appropriate measure of economic loss); Daralyn J. Durie & Mark A. Lemley, *A Structured Approach to Calculating Reasonable Royalties*, 14 Lewis & Clark L. Rev. 627, 631 (2010) ("[A] non-exclusive fifteen-factor test that requires balancing and consideration of the interactions between the factors is likely to give little or no practical guidance to a jury.").

While punitive damages and injunctive relief are available in both patent law and contract law, in contract law their applications are more focused. Unlike in patent law, where sweeping injunctions are a primary form of relief consistent with the property-like nature of the right invaded, *see eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006), under

contract law post-sale injunctions may be tailored to the specific legitimate needs of the party suffering the breach to protect only those interests requiring protection. *See* Restatement (Second) of Contracts § 188. Indeed, unreasonable terms of contracts can be excised while preserving the primary legitimate interests and expectations of the parties. *See Visa U.S.A.*, 344 F.3d at 229.

CONCLUSION

For the foregoing reasons, and those set forth in the Petitioner's brief, the judgment of the court of appeals should be reversed.

Respectfully submitted,

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AMICUS CURIAE BRIEF

RECORD
AND
BRIEF

No. 11-796

IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN, *Petitioner,*

v.

MONSANTO COMPANY and
MONSANTO TECHNOLOGY LLC, *Respondents.*

ON WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

BRIEF FOR THE AMERICAN INTELLECTUAL PROPERTY LAW ASSOCIATION AS *AMICUS CURIAE* IN SUPPORT OF AFFIRMANCE

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INTEREST OF THE AMICUS CURIAE

Amicus curiae American Intellectual Property Law Association ("AIPLA") is a national bar association of approximately 14,000 members engaged in private and corporate practice, in government service, and in the academic community.[1] AIPLA represents a wide and diverse spectrum of individuals, companies, and institutions involved directly or indirectly in the practice of patent, trademark, copyright, and unfair competition law, as well as other fields of law affecting intellectual property. AIPLA has no stake in any of the parties to this litigation or in the result of this case other than its interest in seeking the correct and consistent interpretation of the law as it relates to intellectual property issues.[2]

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[1] Pursuant to Supreme Court Rule 37.6, AIPLA certifies that no counsel for a party authored this brief in whole or in part, and that no person or entity, other than AIPLA, its members, or its counsel, has made any monetary contribution to the preparation or submission of this brief. After reasonable investigation, AIPLA believes that (i) no member of its Board or Amicus Committee who voted to file this brief, or any attorney in the law firm or corporation of such a member, represents a party to this litigation in this matter, (ii) no representative of any party to this litigation participated in the authorship of this brief, and (iii) no one other than AIPLA, or its members who authored this brief and their law firms or employers, made a monetary contribution to the preparation of submission of this brief.

[2] In accordance with Supreme Court Rule 37.3(a), counsel for petitioner and counsel for respondent have consented to the filing of the brief of amicus in support of respondent. The consents are submitted herewith.

SUMMARY OF ARGUMENT

This case raises an issue that has been directly addressed but not decided by the Court: whether the authorized sale of patented seed which is used by the purchaser to produce a first crop exhausts the patentee's right to control subsequent generations of seed that are grown from the first crop.

The propagation rights of plant innovators and farmers are governed by the Plant Variety Protection Act, 7 U.S.C. § 2321 *et seq.* ("PVPA"), as well as by utility patents and plant patents. Both Congress and the Court have acted on the express understanding that the exclusive rights conferred by utility patents are not subject to an exemption permitting farmers to grow subsequent generations of crops using patented seed. In confirming that plant inventions may be protected by utility patents as well as Plant Variety Protection certificates, the Court repeatedly emphasized that a principal distinction between the two forms of intellectual property protection is that utility patents are not subject to the "saved seed" exemption expressly provided by the PVPA at 7 U.S.C. § 2543 and recognized by this Court in *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 129 n.1, 140, 143 (2001) and in *Asgrow Seed Co. v. Winterboer*, 513 U.S. 179, 181 (1995).

The Court should not carve out a broad exception from utility patent protection that would radically alter the respective rights of plant innovators and farmers in the interrelated statutory systems created by Congress. Such an exception would

effectively eliminate the incentive to discover and develop new genetically-engineered plants.

The parties' arguments are narrowly focused on patent rights in Roundup Ready® soybeans, but an extension of the patent exhaustion doctrine in this case could have consequences extending far beyond seeds, creating uncertainty with respect to the patent rights on which the broader biotechnology industry is based. Only two of the 21 claims asserted by Monsanto are specifically directed to soybeans and soybean plants; the rest relate to fundamental genetic engineering discoveries that can be applied to other crops, and to introduced genetic traits other than tolerance for glyphosate herbicides.[3] If the sale of a single soybean incorporating these varied technologies exhausts all of the patent rights that are "embodied" in the seed's DNA, competitors could be free to excise the patented, genetically engineered sequences and use them in other products, in derogation of the patent owner's rights in inventions having much broader uses and applications.

Although Bowman argues that the Federal Circuit created an exception from the patent exhaustion doctrine applied in *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008), patent exhaustion applies only to the specific product that is sold by the patentee. It does not confer a right to recreate the patented invention by propagating

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[3] The asserted claims of U.S. Patent 5,352,605 and U.S. Reissue Patent RE39,247E are reproduced and summarized in Monsanto's motion for summary judgment, A0256-A0260.

subsequent generations of seed that negate the patentee's right to exclude others from "making" the patented invention. The Federal Circuit correctly concluded that, although farmers "may have the right to use commodity seeds as feed, or for any other conceivable use, they cannot 'replicate' [respondent's] patented technology by planting it in the ground to create newly infringing genetic material, seeds, and plants." *Monsanto Co. v. Bowman*, 657 F.3d 1341, 1348. The decision of the Federal Circuit should be affirmed on this basis.

ARGUMENT

I. Exhaustion of the Right to Control Propagation of Patented Seed Would Disrupt the Balance Created by Congress between the Patent Act and the PVPA

The ability of farmers to use, sell, and propagate new varieties of seed is subject to the intellectual property rights of innovators under both patent law and the Plant Variety Protection Act, 7 U.S.C. § 2321 *et seq.* ("PVPA"), which establishes a "patent-like" parallel system for certain plants that are sexually reproduced and propagated by seed. *J.E.M. Ag Supply, Inc.*, 534 U.S. at 138; *Asgrow Seed Co.*, 513 U.S. at 181. While the intellectual property protection of the Patent Act and the PVPA overlap as to subject matter, the two regimes contain critical differences for this case that are a result of deliberate policy decisions by Congress. One particular difference is the decision by Congress to provide certain infringement exemptions under the PVPA that are not available under the Patent Act.

This Court should not undermine that Congressionally dictated difference between these two regimes through an application of the exhaustion doctrine.

A. Differences between the Patent Act and the PVPA

Like a utility patent, a PVP certificate grants the owner of a protected variety the exclusive right to sell the variety or to offer it for sale, and to import the variety into the United States, among other exclusive rights. 7 U.S.C. § 2541(a)(1). The PVPA also grants exclusive propagation rights which generally correspond to a patent owner's right to exclude others from making the invention, including the right to sexually multiply the protected variety as a step in marketing (for growing purposes) the variety (7 U.S.C. § 2541(a)(3)), and to use the protected variety in producing (as distinguished from developing) a hybrid or different variety. 7 U.S.C. § 2541(a)(4).

The greatest difference between the protection for innovators afforded by a utility patent and by a PVP certificate is that the PVPA contains several exemptions from infringement of a PVP certificate that do not apply to utility patents. The exclusive rights granted by a certificate of plant protection are subject to a research exemption (7 U.S.C. § 2544), and to a crop exemption that permits farmers to save limited amounts of seed for replanting on their own farms (7 U.S.C. § 2543).

Soybean seed can be protected by a utility patent and by a PVP certificate, as in *Asgrow*, where the defendants purchased soybean seed varieties protected by a PVP certificate, planted 265 acres of the seed, and sold the entire salable crop to others for use as seed – 10,529 bushels, enough to plant 10,000 acres. 513 U.S. at 182. The defendants argued that their sales were not infringing under the "saved seed" exemption, which permitted a farmer to save seed from a crop of a protected variety and use it for replanting on his own farm, or for sale to other farmers. *Id.* at 184 (citing 7 U.S.C. § 2543). They contended that this provision gave them the right to sell an unlimited amount of seed produced from a protected variety to other farmers. *Id.* at 185. The Court disagreed, concluding that the amount of seed that can be saved for replanting under the PVPA is limited to the amount necessary to replant a farmer's own acreage. *Id.* at 191 and n.5. The Court considered that while the text of the statutory saved seed provision "is by no means clear, this is in our view the only reading that comports with the statutory purpose of affording 'adequate encouragement for research, and for marketing when appropriate, to yield for the public the benefits of new varieties.'" *Id.* at 192 (quoting 7 U.S.C. § 2581).

The limited statutory exemption from infringement under the PVPA, which does not permit propagating a novel variety as a step in marketing the variety for growing purposes, was the principal issue in *Asgrow*. *See id.* at 186-191. In 1994, Congress contracted the PVPA saved-seed exemption by eliminating the farmers' right to sell

PVPA-protected seed to other farmers for reproductive purposes. *See id.* at 184 n.2.

In *J.E.M. Ag Supply* the Court contrasted the scope of protection afforded by the PVPA and utility patents, confirming that there is no exemption from patent infringement that permits growers to save or replant patented seed without authorization of the patent owner. *See* 534 U.S. at 140 (citing *Asgrow*) ("The PVPA also contains exemptions for saving seed and for research. A farmer who legally purchases and plants a protected variety can save the seed from these plants for replanting on his own farm. See § 2543. ... The utility patent statute does not contain similar exemptions."); at 143 ("Because of the more stringent requirements, utility patent holders receive greater rights of exclusion than holders of a PVP certificate. Most notably, there are no exemptions for research or saving seed under a utility patent."); and at 129 n.1 ("the PVPA provides exemptions for research and for farmers to save seed from their crops for replanting. ... Utility patents for plants do not contain such exemptions.").

A reason that there is no parallel exemption for replanting patented commodity seeds, according to the Court, is that "the requirements for obtaining a utility patent under § 101 are more stringent than those for obtaining a PVP certificate, and the protections afforded by a utility patent are greater than those afforded by a PVP certificate. Thus, there is a parallel relationship between the obligations and the level of protection under each statute" *Id.* at 142.

The Court observed that "[i]t is much more difficult to obtain a utility patent for a plant than to obtain a plant variety certificate because a utility patentable plant must be new, useful, and nonobvious, 35 U.S.C. §§ 101-103." *Id.* In order to be granted a utility patent, "a breeder must describe the plant with sufficient specificity to enable others to 'make and use' the invention after the patent term expires. § 112." *Id.* The description requirement for a utility patent claiming plants "includes a deposit of biological material, for example, seeds, and mandates that such material be accessible to the public." *Id.*; *see* 37 C.F.R. §§ 1.801-808 (2012). By contrast with a utility patent, a PVP certificate does not require a showing of usefulness or nonobviousness, and instead requires that "the variety be only new, distinct, uniform and stable." 534 U.S. at 142 (citing 7 U.S.C. § 2402(a)). The PVPA does not require a description and disclosure as extensive as the utility provision, and is satisfied by "a description of the variety setting forth its distinctiveness, uniformity and stability and a description of the genealogy and breeding procedure, when known." *Id.* at 142-43 (citing 7 U.S.C. § 2422(2)). While the PVPA requires a deposit of seed in a public depository, neither the statute nor the applicable regulation mandates that the deposited seed be accessible to the general public during the term of the certificate. *Id.* at 143 (citing 7 U.S.C. § 2422(4) and 7 C.F.R. §97.6 (2001)). The Court concluded that "[b]ecause of the more stringent requirements, utility patent holders receive greater rights of exclusion than holders of a PVP certificate. Most notably, there are no exemptions for research or saving seed under a utility patent." *Id.*

B. Differences Have Been Sustained in Subsequent Legislation Amending the Patent Act and the PVPA

Although Congress increased the level of protection for seed producers under the PVPA in 1994, "a plant variety certificate still does not grant the full range of protections afforded by a utility patent." *Id.* For example, "a breeder can use a plant that is protected by a PVP certificate to 'develop' a new inbred line while he cannot use a plant patented under §101 for such a purpose." *Id.* The PVPA contains exemptions permitting a protected variety to be used for "plant breeding or other bona fide research" (7 U.S.C. § 2544), but the utility statute does not contain a similar exemption. *Id.* at 153-54.[4]

Furthermore, although the 1994 amendments extended the rights of PVP certificate holders to varieties that are "essentially derived" from protected varieties, the statute expressly excludes new varieties that are essentially derived from earlier essentially derived varieties. 7 U.S.C. § 2541(c)(1). In view of considerable uncertainty as to the extent to which genetically modified plants are "essentially derived" from protected varieties, utility patents may provide the only effective intellectual property protection for valuable new varieties

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[4] The PVPA also provides an infringement exemption for transporters and advertisers (7 U.S.C. § 2545) and a compulsory licensing clause with a "just price" provision (7 U.S.C. § 2404).

combining the genomes and traits of existing plant varieties.[5]

If, contrary to the reasoning of *J.E.M. Ag Supply*, purchasers of patented commodity seed are free to propagate commodity second-generation seed, because patent rights were exhausted by a prior authorized sale, patent holders would not "receive greater rights of exclusion than holders of a PVP certificate." 534 U.S. at 143. Innovators would lose the ability to recover investment costs of developing new plants with valuable traits following a first sale, to the detriment of innovators and users alike.

In considering the scope of the PVPA saved seed exemption, the Fifth Circuit construed the provision narrowly, to exclude sales made through intermediaries such as agricultural cooperatives. *See Delta & Pine Land Co. v. Peoples Gin Co.*, 694 F.2d 1012 (5th Cir. 1983). Weighing the benefits that Congress expected from increased private research

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[5] An essentially derived variety is defined in 7 U.S.C. § 2401(a)(3), which provides in part that an essentially derived variety is one that "except for differences that result from the act of derivation, conforms to the initial variety in the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety." 7 U.S.C. § 2401(a)(3)(iii). The key term "essential characteristics" is not defined in the statute, and the scant legislative history provides little guidance on the intended scope of the essential derivation provision. *See* H.R. REP. NO. 103-699, at 19 (1994) (statement of Kenneth C. Clayton, USDA) (the essential derivation provision will "end the practice of altering just slightly the successful varieties of others, and escaping infringement charges under present law while benefiting from the desirable characteristic of the initial variety").

and development, the Fifth Circuit reasoned as follows:

> The broader the construction given the exemption, the smaller the incentive for breeders to invest the substantial time and effort necessary to develop new strains. The less time and effort that is invested, the smaller the chance of discovering superior agricultural products. If less time and effort is invested, long-term benefits to the farmer in the form of superior crops and higher yields will be lost. Although it may appear that the broadest reading of the exemption would benefit farmers today, it could be detrimental to their interests tomorrow.

Id. at 1016. This pragmatic analysis, which applies with even greater force to utility patents, was based on recognition that it is expensive to develop new seeds that produce better results. It recognizes that the grant of a meaningful exclusive right in the new variety "is the only way we know to get people to invest their time and money." *Ibid.* (quoting a statement of Rep. William R. Poage, a Texas congressman instrumental in the passage of the PVPA, 116 Cong. Rec. 40,295-40,303, 40,295 (daily ed. Dec. 8, 1970)).

Similar reasoning motivated Congress in enacting the Plant Patent Act of 1930 (35 U.S.C. §§ 161-164). In the absence of patent protection, Congress considered that the cost of new asexually reproduced plants was unnecessarily increased, and their availability restricted, since "the breeder to-day must make excessive charges for specimens of the

new variety disposed of by him at the start in order to avail himself of his only opportunity for financial reimbursement. Under the bill the breeder may give the public immediate advantage of the new varieties at a low price with the knowledge that the success of the variety will enable him to recompense himself through wide public distribution by him during the life of the patent." S. REP. NO. 71-315, at 2 (1930). As with utility patents, a first-sale patent exhaustion doctrine applied to plant patents would vitiate this legislative goal.

In considering proposed amendments to the PVPA in 1993, Congress was aware of the differences between PVPA and utility patent protection for plants emphasized by the Court in *J.E.M. Ag Supply*. At a hearing on the Senate bill to amend the PVPA Senator Robert Kerrey, who was a sponsor, stated: "Under current law, Federal protection of the intellectual property rights that arise from plant breeding is available in the United States in three forms: plant patents, plant variety protection, and utility patents." *Plant Variety Protection Act Amendments of 1993: Hearing on S. 1406 Before the Subcomm. On Agricultural Research, Conservation, Forestry, and General Legis.*, 103rd Cong. 2 (1993) (statement of Sen. Robert Kerrey). As Senator Kerrey observed, "While similar in its intent of providing incentive and protection to inventors, the PVPA differs from the Patent and Trademark Act in a number of ways: the legal standards for protection are less stringent; administration is through the Department of Agriculture rather than the Department of Commerce Patent and Trademark office [*sic*] and

exemptions allow the use of protected varieties in the development of new varieties and permit individual farmers to save and sell limited quantities of seed—the so-called 'farmer's exemption.'" *Id.* at 2-3.

In 1999 Congress amended § 119 of the utility patent statute to extend patent protection afforded to plant inventions, without creating a saved seed exemption.[6] *See J.E.M. Ag Supply*, 534 U.S. at 527. The relevant legislative history indicated that § 119 was amended because patent applicants were "unable to base a priority claim on a foreign application for a plant breeder's right when seeking plant or utility patent protection for a plant variety in this country" prior to amendment.[7] Congress thus confirmed and extended utility patent protection for plant inventions, without imposing an infringement exemption similar to the saved seed provision of the PVPA.

The fundamental right to exclude buyers of a plant or seed from propagating a plant, whether by "making" an invention protected by a utility patent under 35 U.S.C. §§ 154(a)(1) and 271(a), or by sexually multiplying a protected variety as a step in marketing (for growing purposes) the variety under the PVPA (7 U.S.C. § 2541(a)(3)), or by asexually reproducing a plant covered by a plant patent (35 U.S.C. § 163) is the core of intellectual property

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[6] Pub. L. No. 106-113, § 1000(a)(9), 113 Stat. 1501A-589, (1999), amending 35 U.S.C. § 119 by adding subsections (f) and (g).

[7] *See* H. R. CONF. REP. NO. 106-464, § 4802 at 145-146 (1999) (App. A at 15a).

protection for plants under the three interrelated systems provided by Congress.

The Court should not carve out new use rights from patent protection that would radically alter the respective rights of plant innovators and farmers in the statutory system fashioned by Congress, as recognized in *J.E.M. Ag Supply* and *Asgrow*.

II. Enforcement of Innovators' Rights in Patented Seed Promotes the Progress of Useful Arts

In agriculture as in other industries, patents fulfill the constitutional purpose of "promoting the Progress of Science and the Useful Arts." U.S. Const., Art. I, § 8; *see J.E.M. Ag Supply*, 534 U.S. at 130-31 ("The patent laws promote this progress by offering inventors exclusive rights for a limited period as an incentive for their inventiveness and research efforts."); *Diamond v. Chakrabarty*, 447 U.S. 303, 307 (1980) (citing *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480-481 (1974); *Universal Oil Co. v. Globe Co.*, 322 U.S. 471, 484 (1944)). The legislative authority to enact patent laws is "exercised in the hope that '[t]he productive effort thereby fostered will have a positive effect on society through the introduction of new products and processes of manufacture into the economy, and the emanations by way of increased employment and better lives for our citizens.'" *Chakrabarty*, 447 U.S. at 307 (quoting *Kewanee*, 416 U.S. at 480). The present case provides a concrete example that illustrates the fulfillment of the constitutional purpose by strong patent rights.

Monsanto invented and developed fundamental technology for genetically modifying plants to express desirable, non-native traits by using DNA from a virus capable of infecting plant cells. That DNA is combined with a "heterologous" protein-encoding DNA sequence, forming a chimeric gene conferring the desired trait that is expressed in the plant cell.

This technology is claimed in the asserted claims of U.S. Patent 5,352,605, which are not limited to particular plants or to any specific heterologous DNA included in the chimeric gene, such as DNA conferring resistance to glyphosate herbicides. A far broader invention is disclosed, enabling other innovators to insert additional desirable traits into plants, using chimeric genes that include the claimed promoters from a cauliflower mosaic virus and any other heterologous DNA sequence encoding for a desired genetic trait. '605 Patent, claims 1, 2, 4 and 5, A0256-A0257.

By providing a basic genetic engineering tool that can be used to transform other valuable crops with desirable traits, Monsanto's '605 Patent, which expired in 2011, promotes the progress of science and the useful arts in an industry that did not exist before Monsanto's inventions.

The asserted claims of U.S. Reissue Patent RE39,247E relate to recombinant chimeric genes that confer resistance to glyphosate herbicides to plant cells, plants, and seeds containing the chimeric genes. *Bowman*, 657 F.3d at 1343-44; A0257-A0260. Although the product accused of infringement in the

present case is glyphosate-tolerant soybean seed, the technology for conferring glyphosate tolerance disclosed in the '247E Patent is more generally applicable to plants and crops, *e.g.*, "corn, wheat, rice, barley, soybean, cotton, sugarbeet, oilseed rape, canola, flax, sunflower, potato, tobacco, tomato, alfalfa, poplar, pine, eucalyptus, apple, lettuce, peas, lentils, grape or turf grass seed." *See* '247E Patent claims 117, 123, A0258.

Once again, Monsanto's contribution to the science of agriculture far exceeds its patented Roundup Ready® soybean product. When the '247E Patent expires in 2014, another industry of innovators will be created, which will be able to use technology disclosed in the patent to create other crops and plants in which glyphosate resistance will be a valuable trait.[8]

Apart from claims to plant cells, plants and seed, the '247E Patent contains claims to the method that was also infringed by Bowman – planting seeds covered by Monsanto's asserted claims, applying glyphosate herbicide to control undesired weeds, and growing soybean plants that are glyphosate-tolerant. (*e.g.*, Claim 130, A0258-A0259). Glyphosate herbicides are not separately patented by Monsanto, and a producer can use any glyphosate product

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[8] *See, e.g.*, Monsanto, Roundup Ready Soybean Patent Expiration, http://www.monsanto.com/newsviews/Pages/roundup-ready-patent-expiration.aspx (last visited Jan. 10, 2013) ("Monsanto will not use variety patents against any U.S. farmers who save varieties containing the Roundup Ready trait for planting on their own farms after expiration of the trait patent.").

produced by a number of competing manufacturers in the patented method. Monsanto's inventions in the field of glyphosate-tolerant plants have created another competing industry providing glyphosate herbicides that can be used in the methods claimed in the '247E patent.

This case provides a concrete illustration of the ways in which broad patent protection for genetic engineering inventions promotes science and the useful arts, not just by increasing yields of food crops, but by expanding useful technologies that extend far beyond soybeans or the trait of glyphosate tolerance that is present in Roundup Ready® seeds.

III. Monsanto's Rights Are Not Exhausted Under *Quanta*

Bowman argues that a single authorized sale of RoundUp Ready® soybean seed exhausts all of Monsanto's patent rights in their progeny, including commodity soybeans produced by the original purchaser that are sold to grain elevators, relying on *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008).

In *Quanta*, the Court held that an authorized sale of a patented item exhausts the patent owner's right to exclude downstream purchasers from using the specific item sold, in certain other patented combinations or methods. *Id.* at 638. Exhaustion of the right to use or sell an item extends to patented combinations including the item, and to methods of using the item as well, if that specific item is

"capable of use only in practicing the patent" or has "no reasonable use" other than being incorporated into the claimed combination or used in the patented method. *Id.* at 631-32 (quoting *United States v. Univis Lens Co.*, 316 U.S. 241, 249 (1942)).

In *Quanta*, the authorized sale of microprocessors and chipsets by Intel exhausted LGE's ability to prevent purchasers of the products from using them in separately-patented combinations with other components such as buses and RAM, where the products had no reasonable use except in combination with these other components. *Id.* at 631, 632, 634 (the Intel products were "specifically designed to function only when memory or buses are attached"). Patents claiming methods of using the products to organize read and write requests from and to main memory, and to manage data traffic on a bus connecting computer components, were also exhausted. *Id.* at 622, 628-29.

A. Second-generation soybean seed has substantial non-infringing uses

In order for an authorized sale to exhaust rights in other combination or method patents, the article that is sold must have no reasonable noninfringing use, apart from its use in the separately-patented combination or method. *Quanta,* 553 U.S. at 638; *Univis*, 316 U.S. at 249, 251-51. In addition, the article must sufficiently "embody" the claims of the patent that is exhausted, *i.e.,* "its only and intended use" must be to practice the second patent's claims, and the product must "all but completely practice" them. *Quanta,* 553 U.S. at 633. The present case

does not involve infringement of a combination patent separately claiming a patented component, as in *Quanta*.

As the Federal Circuit stated in this case, patented seed has uses other than propagation, including as a commodity or as feed. *Bowman*, 657 F.3d at 1348. Indeed, because soybean seed replicates exponentially, its ***principal*** use is as feed or a commodity, except for seed companies who produce the first generation seed under license from Monsanto. In *Asgrow*, the defendants planted 265 acres of Asgrow's protected variety soybean seed and sold the entire salable crop, 10,529 bushels, to others for use as seed – enough to plant 10,000 acres. *See* 513 U.S. at 182. For the same reasons, when Bowman planted 299.1 acres of glyphosate-tolerant commodity soybean seed, the principal use of the crop was undoubtedly for uses other than propagating additional generations of the seed on Bowman's farm. *See* 657 F.3d at 1343.

B. Exhaustion extends only to the original article sold by a patent owner

The Court's precedent, from *Adams v. Burke*, 84 U.S. (17 Wall.) 453, 455 (1873) to *Quanta*, uniformly limits patent exhaustion to the specific item that is sold. In *Quanta*, the Court held that "[t]he longstanding doctrine of patent exhaustion provides that the initial authorized sale of a patented item terminates all patent rights to that item." 553 U.S. at 625. In the precedent cited in *Quanta*, the scope of exhaustion extends only to patent rights to the specific article sold by the patent owner. *See id.* at

626; *Adams*, 84 U.S. at 455 (1873) (the purchase of a patented machine "carrie[s] with it the right to the use of that machine so long as it [is] capable of use."), and at 456 (when a patent owner receives all of the consideration "which he claims for the use of his invention in that particular machine or instrument" it is open to the use of the purchaser without further restriction); *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 516 (1917) ("[T]he right to vend is exhausted by a single, unconditional sale, the article sold being thereby carried outside the monopoly of the patent law and rendered free of every restriction which the vendor may attempt to put upon it."); *Univis*, 316 U.S. at 249 ("[T]he authorized sale of an article which is capable of use only in practicing the patent is a relinquishment of the patent monopoly with respect to the article sold."); and at 250-51 ("[W]here one has sold an uncompleted article which, because it embodies essential features of his patented invention, is within the protection of his patent, and has destined the article to be finished by the purchaser in conformity to the patent, he has sold his invention so far as it is or may be embodied in that particular article.").

The only glyphosate-tolerant seed that is sold with Monsanto's authorization is the first generation of seed, used to produce crops that are sold to grain elevators as commodity seed. The court of appeals correctly observed that the exhaustion doctrine is not implicated, when "the new seeds grown from the original batch had never been sold." *See Bowman*, 657 F.3d at 1347 (quoting *Monsanto Co.* v.

McFarling, 302 F.3d 1291, 1299 (Fed. Cir. 2002), *cert. denied*, 537 U.S. 1232 (2003)).

C. An authorized sale of patented seed does not exhaust the patent owner's right to exclude purchasers from making new seed

Each of the enumerated exclusive rights to "make, use, and sell" is a "substantive right[]" that "may be granted or conferred separately by the patentee." *Adams*, 84 U.S. at 456; *see* 35 U.S.C. §§ 154(a)(1), 271(a). The patent statue grants patent owners the separate right to exclude purchasers from making patented articles, after they are first sold, in order to permit patent owners to recover development costs and profits over the entire course of the patent term.

If a single sale of patented seed to a farmer were to exhaust the separate exclusive right to make the seed, as Bowman argues, the first sale of a bag of seed by Monsanto would permit the purchaser to go into business manufacturing and selling it in competition with the patent owner. This has never been the law.

An authorized sale of a patented item exhausts the patent owner's right to control further use or sale of the specific item, but confers no right on the purchaser to make "a second creation of the patented entity." *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 346 (1961) (citing *American Cotton-Tie Co.* v. *Simmons*, 106 U.S. 89, 93-94 (1882) ("Whatever right the [purchasers] could acquire to the use of the old buckle, they acquired no right to combine it with a substantially new band, to make a cotton-bale

tie.")). In *Mitchell v. Hawley*, 83 U.S. (16 Wall.) 544, 547 (1872), the Court explained that after an authorized sale, a patentee "ceases to have any interest whatever in the patented machine so sold and delivered." However, the purchaser of the patented article "does not acquire any right to construct another machine." *Id.* at 548.

Bowman argues that the sale of patented seed exhausts the right to "use" patented soybean seed by propagating a new generation of seed, without restriction, because seeds are "self-replicating." This is no different from the argument that, by buying a patented machine, the purchaser is entitled to "use" the machine to make other identical machines. That possibility is foreclosed by *Mitchell*, 83 U.S. at 548 ("the purchaser of the implement or machine for the purpose of using it in the ordinary pursuits of life ... does not acquire any right to construct another machine either for his own use or to be vended to another for any purpose.").

As shown by the facts of *Asgrow*, soybean plants are no different from very efficient "machines" for reproducing soybeans at an exponential rate. *See* 513 U.S. at 182. This is a characteristic of many other biotechnology inventions that can be replicated or propagated by cultivation. *See, e.g., Invitrogen Corp. v. Biocrest Mfg. L.P.*, 327 F.3d 1364, 1366 (Fed. Cir. 2003) ("To produce proteins, a laboratory may introduce a DNA molecule containing a particular gene into the bacterium *E. coli*, which serves as a factory to replicate many copies of the DNA molecule and its gene. When an *E. coli* cell replicates by cell division, the DNA in that *E. coli* cell also replicates, providing an increased number of

gene sequences from which protein can be expressed. Thus, the *E. coli* can serve as a factory to produce important proteins.").

Moreover, the soybeans sold by Monsanto and its licensees no longer exist after they are planted, sprout, and grow into plants. Once it is planted, the original seed is spent, and no longer capable of use; it is a "patented manufacture which perishes in the first use of it." *Adams*, 84 U.S. at 456. When the specific seed that is sold is planted, it is used "to the full extent to which it can be used in point of time." *Id.* at 455. "Its capacity for use as [seed] was voluntarily destroyed." *American Cotton-Tie*, 106 U.S. at 94. After planting, "it could not be used again as [seed]." *Id.* Propagation of the original seed is a "second creation of the patented entity," rather than a "use" permitted under the exhaustion doctrine. *See Aro*, 365 U.S. at 346.

IV. The Scope of Exhaustion of Biotechnology Patents Could Extend Far Beyond Specific Plants or Seeds

A holding that an authorized sale of seed exhausts Monsanto's patent rights to prevent unauthorized propagation of RoundUp Ready® soybeans would have unpredictable consequences affecting the broader biotechnology industry.

The absolute exhaustion doctrine proposed by Bowman, which would extend to all patent rights "embodied" in the product sold by a patent owner, could extend far beyond a purchaser's right to replant and harvest the soybeans in dispute. Only

two of the 21 patent claims asserted by Monsanto are limited to soybean plants or seeds. *See* A0257-A0259. The rest cover far broader inventions, including recombinant DNA molecules and promoters that can be used to introduce desirable traits other than glyphosate resistance into a broad variety of plants other than soybeans. If all patent rights in these broad and diverse technologies were exhausted by the sale of a soybean "embodying" them, fundamental biotechnology inventions would be subject to an unfettered research exemption to infringement. In addition, such inventions would be subject to commercial use by competitors in other, unrelated products, despite the Court's conclusion in *J.E.M. Ag Supply* that there is no research exemption to infringement of a utility patent. *See* 534 U.S. at 143.

Like many biotechnology patents, the Monsanto patents at issue claim a spectrum of genetic engineering technologies, from fundamental discoveries that are applicable to plants in general, to their specific applications in soybean plants and seeds. All of the claimed technologies may be "embodied" in the DNA of a single RoundUp Ready® soybean seed. The extension of the patent exhaustion doctrine to all of the claimed technologies that are present in a patented seed or biological product could devastate the seed and biotechnology industries.

For example, patented genes, products and genetic traits are present in products including: recombinant enzymes, useful in fields from food processing to textile production; biopharmaceuticals,

such as human insulin, growth factors, recombinant antibodies and vaccines; disease diagnostic kits and diagnostic research tools, for detecting cancers and HIV, and tools useful in the identification of specific targets that are promising for new drug development; personalized medicine and individual genome analysis tools, such as those involved in the field of bioinformatics; and cell lines. All of these biological products can be easily replicated on a massive scale based on similarly patented techniques.

If the purchaser of a soybean seed were permitted to excise a patented promoter or other patented genetic construct, and use it to introduce other valuable traits in different crops or plants, plant biotechnology patents would be valueless after the first sale of any product that includes the patented genes or "embodies" any claimed technology.

CONCLUSION

For the foregoing reasons, the AIPLA urges the Court to affirm the decision of the Federal Circuit.

Respectfully submitted,

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AMICUS CURIAE BRIEF

No. 11-796

IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN,
Petitioner,

v.

MONSANTO COMPANY, *et al.*,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF *AMICUS CURIAE* OF THE AMERICAN SEED TRADE ASSOCIATION IN SUPPORT OF RESPONDENTS

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IN THE

Supreme Court of the United States

No. 11-796

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, *et al.*,

Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF *AMICUS CURIAE* OF THE AMERICAN SEED TRADE ASSOCIATION IN SUPPORT OF RESPONDENTS

STATEMENT OF INTEREST OF AMICUS CURIAE

Founded in 1883, the American Seed Trade Association (ASTA) is a voluntary, nonprofit national trade association representing approximately 700 members involved in seed production and distribution, plant breeding, and related industries in North America.[1]

[1] No counsel for any party authored this brief in whole or in part, and no person or entity, other than the amici curiae and their members, made a monetary contribution to the prepara-

As an authority on the seed industry, ASTA monitors and takes positions on science and policy issues of industry-wide importance. Its mission is to enhance the development and movement of quality seed worldwide.

Many ASTA members are research-intensive companies engaged in the discovery, development, and marketing of enhanced seed—seed that incorporates one or more patented seed technologies. These ASTA members annually invest billions of dollars researching and developing patented seed technology to make American agriculture more productive and the Nation's food supply more plentiful and nutritious. To protect this investment, these entities seek patent protection for their discoveries. There are a number of different patented seed technologies, including novel plant varieties created through traditional breeding, technologies that improve traditional breeding methods, improved research techniques for identifying beneficial genes, enabling technology for incorporating these genes into plant germplasm, and transgenic crops with one or more beneficial traits.[2] These ASTA members hold a significant percentage of the utility patents claiming plant-related subject matter that have been granted by the U.S. Patent &

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tion and submission of this brief. This brief is filed with the consent of the parties, whose letters of consent have been filed with the Clerk. Respondent, Monsanto Company is a member of ASTA.

[2] The term "germplasm" refers to all of the genetic information in the seed—meaning all of the plant's genes. Specific genes in the germplasm provide a plant with specific characteristics, or "traits"; this in turn means that traits such as high yield, pest resistance, or drought resistance can be traced back to one or more genes in a seed's germplasm. Plants of the same type with different traits are referred to as "varieties." For example, there are many varieties of corn or soybeans and seed developers strive to produce improved varieties through both traditional breeding techniques and modern biotechnology.

Trademark Office. With this patent protection in hand, many of these entities take on the responsibility of obtaining and maintaining the global regulatory authorizations necessary for both cultivation and trade in products produced from transgenic crops such as grain, many processed foods, plastics, biofuels, and oils.

In addition, 65% of ASTA's members are medium sized seed companies with annual sales of $4 million or less. Many are licensed to incorporate patented seed technology developed by others into their own seed varieties, thereby ensuring that there is a wide variety of enhanced seeds on the market.

ASTA participates as an amicus in patent cases affecting its members. *See, e.g.*, ASTA Amicus Br. in *Quanta Computer, Inc.* v. *LG Electronics, Inc.*, 553 U.S. 617, 625 (2008); ASTA Amicus Br. in *J.E.M. Ag Supply* v. *Pioneer Hi-bred Intern., Inc.*, 534 U.S. 124 (2001). And ASTA and its members have a substantial interest in this case. Private seed patentees typically make their seed technology available in a manner consistent with the Court's patent precedents. If the Court were to hold that the sale of *one* generation of seed exhausts all rights in every *successive* generation, a patentee would, with only a handful of sales, lose the ability to exclude any infringing products from the markets, including those of competitors. This would have a devastating effect on the seed industry, evaporate investment in patented seed technology, and deprive farmers and the public of the current and future benefits of enhanced seed.

SUMMARY OF ARGUMENT

The Patent Act separately protects each copy of a patented article, and this Court's precedents consistently recognize that each patent right may be separately granted. These principles apply to all technol-

ogies. An exception should not be made for seed technology. Indeed, the success of enhanced seed—its overwhelming popularity with farmers, the benefit it confers on the public, and the burgeoning private investment in research and development—all counsel in favor of finding that the Court's current precedent strikes the right balance and should be maintained.

1. Patented seed technology benefits farmers, consumers, and the environment. The many documented benefits of this technology include reduced pesticide use, simplified weed control, increased crop yield, improved nutrition in certain staple foods, and increased use of certain conservation practices.[3] These primary benefits also create secondary benefits. For example, as the world population increases, improved yield reduces the demand for farmland resulting in less water use and supporting biodiversity by putting land to other uses. There is no better example of the benefit of enhanced seed to farmers than its overwhelming popularity. Currently, 88 percent of the Nation's corn, 94 percent of its soybeans, and 90 percent of its cotton is grown from enhanced seeds.[4]

The benefits of patented seed technology are many. But researching, developing, and obtaining (and maintaining) regulatory approvals for this technology can be expensive and time consuming. For example, in order to protect global trade, including both

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[3] *See* American SoyBean Association *et al.* (ASA) Br. at G (detailing conservation practices).

[4] U.S. Dep't of Agriculture, Econ. Research Serv. Report, *Adoption of Genetically Engineered Crops in the U.S.* (2012), http://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us.aspx; U.S. Dep't of Agriculture, National Agricultural Statistics Service, Statistics by Commodity, http://www.nass.usda.gov/Statistics_by_Subject/index.php?sector=CROPS; *see also* ASA Br. at E.

domestic trade and U.S. export markets, global regulatory approvals for products produced from transgenic crops must be obtained and maintained. Indeed, private research expenditures in this field totaled $3.5 billion in 2010, a figure that has increased nearly every year since 1994, when expenditures totaled $1.5 billion.[5]

2. The Patent Act and this Court's long-standing precedent separately protect each copy of a patented article and recognize that each patent right (to make, use, sell, offer for sale, or import) may be separately licensed. These settled principles correctly balance the incentive to improve technology with the need for society to benefit from the improvements.

The sale of a single patented article does not exhaust the patentee's rights in future copies of the patented article. Thus, while an authorized purchase of a patented article or machine carries with it "the right to the use of that machine so long as it [is] capable of use," *Adams* v. *Burke*, 84 U.S. 453, 455 (1873), that transaction does not confer on the purchaser the right to "make a new article." *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 365 U.S. 336, 346 (1961) (quoting *United States* v. *Aluminum Co. of America*, 148 F.2d 416, 425 (2d Cir 1945)). Rather, the patent grant is called "into play for a second time" upon a "second creation of the patented entity." *Aro*, 365 U.S. at 346; *see also American Cotton-Tie Co.* v. *Simmons*, 106 U.S. 89 (1882).

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[5] Paul W. Heisey and Keith O. Fuglie, *Private Research and Development for Crop Genetic Improvement* 39, in Keith O. Fuglie *et al.*, Econ. Research Serv., U.S. Dep't of Agric., Econ. Research Report No. 130, *Research Investments and Market Structure in the Food Processing, Agricultural Input, and Biofuel Industries Worldwide* (Dec. 2011), at 25-48 ("Private Research and Development for Crop Genetic Improvement"), *available at* http://www.ers.usda.gov/media/199879/err130_1_.pdf.

3. The seed industry operates within these principles and its success demonstrates that the correct balance is being struck. In typical seed industry practice, a patentee grants a farmer the rights to plant, cultivate, and harvest such that the patented seed purchased by the farmer is spent. The patentee also grants the right to certain uses of the second generation of seeds. But the patentee does not, in that transaction, grant the right to plant the second generation and grow a third generation; that would constitute a "second creation of the patented entity," in *Aro*'s words, 365 U.S. at 346, and is not covered by the initial grant.

These principles are both straightforward and settled. Their efficacy is demonstrated by the overwhelming popularity of patented seed technology among farmers, the benefits to society it confers, and the continued private investment it spurs. Given these successes, there is no justification for creating an exception to these principles.

4. Petitioner, however, seeks just such an exception. Under Bowman's proposed rule, purchasing one generation of seeds would enable the purchaser to *indefinitely* generate successive generations of seed with the same patented improvements. If that rule controls, a patentee would be unable to stop a farmer—or a competitor—from using this second seed generation to produce future generations of the improved seed at an ever-accelerated rate. Thus, with only a handful of sales, the patentee would lose the ability to exclude any infringing products from the market—including those of competitors.

The consequences of this lack of control over future seed replication would be devastating for the seed industry. Firms that have developed patented seed technology would stand to lose hundreds of millions of dollars in revenues in very short order. And hundreds of seed companies that license patented

seed technology—and whose entire corporate livelihoods are based on the right to incorporate this technology into their own seed varieties—would be at serious risk of going out of business.

The loss of control over downstream enhanced seed replication would quickly produce other consequences, too. Investment in patented seed technology, which is currently on the order of billions of dollars a year, would be expected to slow to a trickle; private firms would have little incentive to invest the substantial resources required to develop improved seed technology if their patent rights were basically forever extinguished upon the very first sale. And for those few stalwart developers remaining in the business, those companies would have to recoup their research and development and regulatory costs—and earn a return on investment—all through a limited number of transactions with first-time customers. The price of seed in such circumstances would likely be so prohibitively expensive that few farmers could afford it, and farmers (and the public) would be deprived of the current and future benefits of enhanced seed.

Further, adopting Petitioner's rule would, at best, severely disrupt global trade. Patentees currently expend significant resources obtaining and maintaining the necessary global regulatory approvals for cultivating and trading in seeds, crops, and end products containing transgenic technology. Without patent protection for successive generations of seed, patentees would be unable to justify this expense thereby disrupting, if not entirely halting, the global grain trade in these products.

The Court should maintain its current course, decline Bowman's offer to carve out an exception to its settled rule, and declare that in seed technology, just like any other technology, the sale of a patented

article does not exhaust the patentee's rights in future copies of the article.

ARGUMENT

I. PATENTED SEED TECHNOLOGY PROVIDES NUMEROUS BENEFITS TO SOCIETY BUT IS COSTLY AND TIME-CONSUMING TO RESEARCH AND DEVELOP.

A. Overview

Farmers and scientists have long searched for ways to create and improve plants by altering their genetic makeup. One such technique, with ancient origins, is selective breeding. This approach involves a farmer or company saving seed from plants with desirable characteristics, such as high yield, and replanting only these seeds the next growing season. Over many growing seasons, this selective breeding creates a buildup of favorable genes in the seed's germplasm. Another approach involves crossing one variety of a plant with another variety to create a new "hybrid" variety of the same plant.[6] For example, a corn variety with high yield may be crossed with another corn variety with good drought resistance in order to combine these two beneficial traits in one plant.

Over time, plant breeders have developed and perfected breeding techniques. In fact, traditional breeding has had a huge impact on global agriculture. Almost without exception, the commercial crops grown today have been genetically modified

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[6] *See* H.R. Subcomm. on Basic Research of H.R. Comm. on Science, *Seeds of Opportunity: An Assessment of the Benefits, Safety, and Oversight of Plant Genomics and Agricultural Biotechnology*, Comm. Print 106-B, at 10, 14 (2000) ("*Seeds of Opportunity*"), *available at* http://test.bio.org/foodag/background/NickSmith_SeedsOfOpportunity.pdf.

over time by one of these techniques. Indeed, most important food crops "have been altered to such an extent that their wild ancestors are unrecognizable, and in some cases they are unknown altogether."[7] Modern corn, for instance, bears little resemblance to its early ancestor, teosinte, whose cobs measured only one to two inches long and boasted few kernels. Ancient varieties of potatoes and tomatoes also were vastly different from their modern relatives—and barely edible, if at all. It took centuries of careful breeding to develop those crops into the foods we consume today.[8] Indeed, traditional breeding is still employed to produce new plant varieties today and a number of improved breeding techniques, and the resultant varieties, are patented.

Despite this, these techniques have certain limitations. For example, traditional breeding involves the transfer of many genes—some carrying desirable traits, others not—to create a new plant variety. Producing a plant with the right combination of genes thus requires repeated rounds of breeding, without any guarantee that the beneficial traits will be successfully expressed in the next generation.

This is where modern biotechnology adds further value. With recent advances in biotechnology, scientists can now insert genes bearing *only* desirable traits directly into seed germplasm—significantly speeding the process to market.[9] And where traditional breeding techniques combine only plant traits, limiting the number of potentially beneficial combinations, modern biotechnology can add beneficial traits from other species, such as bacteria, to plants.

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[7] *Id.*

[8] *See* Council for Biotechnology Information, *Good Ideas Are Growing: Plant Biotechnology* 2 (2003) ("*Good Ideas*"), *available at* http://www.massey.ac.nz/~ychisti/AgBiotech.pdf.

[9] *Good Ideas* at 2; *Seeds of Opportunity* at 14.

This ability to transfer specific genes into a plant from a variety of sources has been likened by one commenter to the "discovery of fire";[10] it significantly broadens the potential for adding beneficial traits to the Nation's crops.

In order to realize these benefits, companies expend significant resources researching and developing a wide variety of improved seed technologies. For example, companies develop novel plant varieties through traditional breeding, more efficient breeding techniques, improved research techniques for identifying beneficial genes, enabling technologies for incorporating these genes into plant germplasm, and transgenic crops with one or more beneficial traits. To protect this investment, companies obtain patent protection for their discoveries. In fact, the current patent protection afforded seed is widely credited for the dramatic growth of private investment in, and the development of, improved seed technology.[11] Thus, both traditional breeding and modern biotechnology have produced, and continue to produce, a wide variety of patented seed technologies.

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[10] Haley Stein, *Intellectual Property and Genetically Modified Seeds: The United States, Trade, and the Developing World*, 3 N.W. J. of Tech. & Intell. Prop. 160, 169 (Spring 2005) ("*Intellectual Property and Genetically Modified Seeds*") (quotation omitted), *available at* http://scholarlycommons.law. northwestern.edu/cgi/viewcontent.cgi?article=1033&context=njtip.

[11] Jorge Fernandez-Cornejo, *et al.*, *Have Seed Industry Changes Affected Research Effort?*, Amber Waves Vol. 2 Issue 1, at 17 (Feb. 2004), *available at* http://www.ers.usda.gov /AmberWaves/February04/Features/HaveSeed.htm; Stein, *Intellectual Property and Genetically Modified Seeds* at 160, 178; Brian D. Wright, Univ. of Cal., Div. of Agric. & Nat. Res., *Plant Genetic Engineering and Intellectual Property Protection*, Agric. Biotechnology in Cal. Series, Pub. 8186, at 3-5 (2006), *available at* http://ageconsearch.umn.edu/bitstream/131780 /2/features_seedindustry.pdf.

B. Patented Seed Technology Benefits Farmers, Consumers, And The Environment.

Patented seed technology produces many documented benefits and will play a crucial role in addressing the challenges facing U.S. agriculture. This technology reduces pesticide use, increases crop yield, improves nutrition in certain staple foods, simplifies weed control, and benefits the environment. These primary benefits in turn create secondary benefits. For example, as the world's population increases, improved crop yield reduces the demand for farmland, resulting in less water use and supporting biodiversity by putting land to other uses.[12]

All these benefits have not gone unrecognized. The near-universal adoption of certain crops by United States farmers demonstrates the overwhelming popularity of patented seed technology, as well as its real-world benefits.

There are a number of enhanced crops on the market and in development. "Bt" crops, for example, are genetically engineered to carry genes from *Bacillus thuringiensis* ("Bt"), a naturally-occurring soil bacterium. Bt corn is resistant to the European corn borer, a pernicious pest that costs U.S. corn growers over $1 billion each year.[13] Other crops, such as the

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[12] Graham Brookes and Peter Barfoot, *GM Crops: Global Socio-Economic and Environmental Impacts 1996-2009* (2011), ("*Global Socio-Economic and Environmental Impacts*"), *available at* http://www.pgeconomics.co.uk/pdf/2012globalimpactstudyfinal.pdf.

[13] Jorge Fernandez-Cornejo, *et al.*, Econ. Research Serv., U.S. Dep't of Agric., Agric. Economic Rep. No. 786, *Genetically Engineered Crops for Pest Management in U.S. Agriculture: Farm-Level Effects* 2 (May. 2000) ("*Genetically Engineered Crops*"), *available at*http://www.ers.usda.gov/media/323484/aer786_1_.pdf; *Seeds of Opportunity* at 15.

soybean crops at issue here, have been modified to tolerate certain broad-spectrum herbicides used by farmers to control weeds. This significantly simplifies weed control making farming more efficient. *See* ASA Br. at G. Still other crops like papaya and squash have been modified to protect themselves against viral infection in much the same way humans are protected from disease—through "inoculation" and the resultant building of a natural defense.[14]

The use of these crops has had a "significant impact on U.S. agriculture,"[15] including simplified weed control, increased yields, reduced pesticide use, increased household income for farmers, and environmental benefits. A 2011 assessment of the impacts of patented seed technology found that enhanced crops have increased farm income in the U.S. by $29.8 billion between 1996 and 2009.[16] One study of 13 enhanced crops planted in 2005 found that the use of such crops increased yields by 8.3 billion pounds, raised farm net income by $2 billion, and reduced pesticide use by 69.7 million pounds.[17] Further, these technologies have allowed the use of

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[14] *Genetically Engineered Crops* at 2; *Good Ideas* at 3; *Seeds of Opportunity* at 15-16.

[15] Sujatha Sankula, *et al.*, National Center for Food and Agricultural Policy, *Impacts on U.S. Agriculture of Biotechnology-Derived Crops Planted in 2003: An Update of 11 Case Studies*, Executive Summary 1 (Oct. 2004), *available at* www.ncfap.org/whatwedo/pdf/ExecSummary10-18-04.pdf.

[16] Brooks, *Global Socio-Economic and Environmental Impacts* at 30-59.

[17] Sujatha Sankula, National Center for Food and Agricultural Policy, *Quantification of the Impacts on U.S. Agriculture of Biotechnology-Derived Crops Planted in 2005*, Executive Summary 2 (Nov. 2006), *available at* http://www.ncfap.org/documents/2005biotechExecSummary.pdf. *see also Genetically Engineered Crops* at 15-16.

more benign herbicides.[18] In addition to reduced pesticide use, studies have found other significant environmental benefits, including an increase in "no-till" farming practices due to the use of herbicide-tolerant crops.[19] No-till conservation practices—which leave soil virtually undisturbed from harvest to planting—minimize soil erosion and moisture loss and have been credited with creating better wildlife habitats, reducing fuel costs by up to 50 percent, and reducing greenhouse gases.[20] The study concludes that "[t]he fact that adoption of biotechnology-derived crops has continued to grow each year since they were first introduced is a testimony to the ability of these crops to deliver tangible positive impacts and to the optimistic future they hold."[21]

A government report issued in 2000 on the use of insect-resistant and herbicide-tolerant corn, soybeans, and cotton presented similar findings. The report found that the use of such crops generally led to higher yields, increased farm returns, and reduced pesticide use.[22] In particular, the report found that the use of Bt cotton led to "significantly reduced insecticide use" and that the use of herbicide-tolerant

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[18] Fernandez-Cornejo, *Genetically Engineered Crops*, at 3. The report explains, herbicide-tolerant crops "may require lower application rates or fewer herbicide applications," and "in many cases, [herbicide-tolerant] crops allow farmers to use more benign herbicides instead of more harmful ones."

[19] Sankula, *Impacts on U.S. Agriculture of Biotechnology-Derived Crops Planted in 2003* at 7; National Research Council, *The Impact of Genetically Engineered Crops on Farm Sustainability in the United States* (2010), at 151, 215 ("*Impact of Genetically Engineered Crops*"), *available at* https://download.nap.edu/catalog.php?record_id=12804.

[20] *Id.*; *Good Ideas* at 12.

[21] Sankula, *Quantification of the Impacts on U.S. Agriculture of Biotechnology-Derived Crops Planted in 2005* at 12.

[22] *Genetically Engineered Crops* at iii.

soybeans led to "significant decreases in herbicide use."[23]

These positive trends have continued as more growers have planted enhanced seed. A government report found that in 2011, with 88 percent of the nation's corn acreage planted with enhanced seed varieties, the average yield of corn for grain was 34 percent higher than in 1995—the last year before enhanced seed varieties were first planted.[24] Soybean yields have similarly increased by 19 percent between 1995 and 2011, with 94 percent of U.S. soybean acreage planted with enhanced seed varieties today.[25] Cotton yields are up by 23 percent between the period 1990-1995 and 2011, when 90 percent of U.S. upland cotton was genetically engineered.[26]

Those higher yields spur yet more benefits. A 2007 government study, for example, found a positive and statistically significant relationship between the planting of herbicide-tolerant soybeans and off-farm household income.[27] The study's authors hypothe-

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[23] *Id.*

[24] U.S. Dep't of Agriculture, Econ. Research Serv. Report, *Adoption of Genetically Engineered Crops in the U.S.* (2012), http://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us.aspx; U.S. Dep't of Agriculture, National Agricultural Statistics Service, Statistics by Commodity, http://www.nass.usda.gov/Statistics_by_Subject/index.php?sector=CROPS.

[25] *Id.*

[26] *Id.*; *see also* ASA Br. at E.

[27] Jorge Fernandez-Cornejo, Econ. Research Serv. U.S. Dep't of Agric., Econ. Research Report No. 36, *Off-Farm Income, Technology Adoption, and Farm Economic Performance* 20 (Feb. 2007), available at http://www.ers.usda.gov/media/200316/err36_1_.pdf (finding that a 15.9 percent increase in off-farm

sized that adoption of enhanced seed technologies frees operators' time for use in non-farm activities. All of these yields and numbers amply confirm why U.S. farmers have enthusiastically, and almost universally, adopted enhanced seed with respect to certain crops.[28]

Consumers, too, benefit from patented seed technology. Decreased pesticide use reduces adverse impacts on public health. More fundamentally, as the U.S. population has grown, the Nation's supply of arable land has steadily decreased. In 1950, farm acreage totaled over 1.1 billion acres.[29] By 2006, farm acreage had shrunk to just 930 million acres—a reduction of nearly 20 percent.[30] Despite this continuing decrease in arable land, "[o]ver the past 70 years, there has been a remarkable *increase* in the yields of *all* major field crops in the United States," and "*more than half* of [those] yield gains are attributed to genetic improvements achieved by plant breeders."[31]

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household income is associated with a 10-percent increase in the probability of adopting HT soybeans).

[28] Fernandez-Cornejo, *Genetically Engineered Crops* at 18; ASA Br. at E.

[29] National Agric. Statistics Serv., U.S. Dep't of Agric., *Trends in U.S. Agriculture—Farm Numbers and Land in Farms* (Aug.. 2009), *available at* http://www.nass.usda.gov/Publications/Trends_in_U.S._Agriculture/Farm_Numbers/index.asp.

[30] National Agric. Statistics Serv., U.S. Dep't of Agric., *Farms, Land in Farms, and Livestock Operations: 2006 Summary* 2 (Feb. 2007), *available at* http://usda01.library.cornell.edu/usda/nass/FarmLandIn//2000s/2007/FarmLandIn-02-02-2007.pdf.

[31] Jorge Fernandez-Cornejo, Econ. Research Serv., U.S. Dep't of Agric., Agric. Information Bulletin No. 786, *The Seed Industry in U.S. Agriculture: An Exploration of Data and Information on Crop Seed Markets, Regulation, Industry Structure, and Research and Development* 5 (Feb. 2004) ("*The Seed Industry in*

Looking forward, U.S. agriculture faces a number of significant challenges as it attempts to address the needs of a rapidly growing world population with reduced farmland resources. Future generations of patented seed technology will be crucial to successfully navigating these challenges. Environmental stresses such as extremes in temperatures and drought exact an enormous toll on crop production. For example, the USDA estimates losses in excess of $1 billion for Iowa's corn and soybean growers following 2012's drought.[32] Increased resistance to currently used herbicides is also a significant concern. In light of these challenges, drought and freeze resistant crops are currently under development.[33] Crops resistant to multiple herbicides are also close to the market.[34] Continued investment in patented seed technology is essential to addressing the evolving challenges facing U.S. agriculture. *See* ASA Br. at F.

C. Substantial Time and Resources Are Required to Research, Develop, And Obtain Regulatory Approval for Patented Seed Technology.

It takes time, effort, and money to develop and secure approvals for patented seed technology.

U.S. Agriculture"), *available at* http://www.ers.usda.gov/media/260729/aib786_1_.pdf (emphases added).

[32] U.S. Dep't of Agriculture, Risk Management Agency, Federal Crop Insurance Corporation, *Crop Year Statistics for 2012*, Jan. 21, 2013, http://www3.rma.usda.gov/apps/sob/current_week/state2012.pdf.

[33] CropLife International, *Plant Biotechnology Pipeline* at 2, *available at* www.croplife.org/view_document.aspx?docId=3457 (May 2011); *see also Seeds of Opportunity* at 30-31.

[34] Monsanto Co., *Soybean Research & Development Pipeline*, http://www.monsanto.com/products/Pages/soybean-pipeline.aspx (last viewed Jan 20, 2013).

And while plant breeding was "traditionally the domain of public sector investment,"[35] the private sector has assumed a leading role over the last few decades, resulting in a marked "shift of more R&D activity to the private sector."[36] Individual private firms invest substantial resources each year in enhanced seed technology. Of the $3.5 *billion* total R&D expenditures in 2010 by the seed industry, the largest six agricultural seed companies alone spent $2.6 billion. Even smaller firms spent one-quarter of the total R&D expenditures in 2010, with other seed companies spending a total of $732 million and small and medium-sized biotechnology firms spending nearly $100 million.[37]

Once an improved seed is developed, an entity (usually the patentee) must obtain and maintain regulatory approvals for as long as certain seed technologies are in the supply chain. For example, the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) oversees field trial and large-scale production of all new transgenic plant varieties. And the Environmental Protection Agency regulates plant varieties enhanced to resist pests. The cost of guiding a single genetically engineered event through the regulatory approval process in the U.S. alone is estimated at between $6 and $15 million.[38] These regulatory approvals must

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[35] *The Seed Industry in U.S. Agriculture* at 42 n.11.

[36] *Id.* at 41. *See also* Stein, *Intellectual Property and Genetically Modified Seeds* at 176 ("Private firms now lead in research and development of [genetically engineered] seeds—a role once dominated by governments and international public institutions.").

[37] Paul W. Heisey and Keith O. Fuglie, *Private Research and Development for Crop Genetic Improvement* 39, at 25-48.

[38] Nicholas Kalaitzandonakes *et al.*, *Compliance Costs for Regulatory Approval of New Biotech Crops*, *in* Richard E. Just *et al.* (eds.), *Regulating Agricultural Biotechnology* 25 Nature

be obtained and maintained throughout the world to protect the Nation's export markets. But, as long as one entity maintains the necessary regulatory approvals, the remaining members of the supply chain can rely on those approvals. Thus, the patentee takes on the costly and time-consuming regulatory process for the benefit of all who cultivate or trade in the seed, grain, or end products containing these seed technologies.

II. THIS COURT'S PRECEDENT CORRECTLY BALANCES THE INCENTIVE TO IMPROVE SEED PRODUCTS WITH THE NEED FOR SOCIETY TO BENEFIT FROM THOSE IMPROVEMENTS.

All seeds follow the same course from genesis to end. Planting and cultivating a seed destroys it and creates the next generation of seeds. Under the right soil, weather, and water conditions, and with the work of an experienced farmer, seeds are germinated, cultivated, protected from pests and invasive weeds, and grown into a new, second generation of plants. After this process, the original seed is spent and the crop is harvested. However, the new plant produces a second generation of seeds; in fact, each single original seed creates multiple second-generation seeds. Soybeans, for example, have been shown to produce up to eighty second-generation seeds from just one first-generation seed. Resp. Br. at 5. Those second-generation seeds may in turn be planted and cultivated to produce a third generation of plants, and seeds, and so on. In this way, a seed

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Biotechnology 5, 509-10 (2007) *Available at* http://fbae.org/2009/FBAE/website/images/pdf/important-publiction/ Compliance_costs_Kalaitzandonakes_Alston_Bradford_May_2007.pdf.

may be reproduced indefinitely and at an accelerated rate.[39]

The question in this case, of course, is whether the sale of patented first-generation seed exhausts all patent rights in each successive generation of seeds. The answer is no.

For over 130 years, this Court has hewed to the principle that the patent exhaustion doctrine limits the patentee's control of *the article sold*, and no more than that. *See Quanta Computer, Inc.* v. *LG Electronics, Inc.*, 553 U.S. 617, 625 (2008) ("the longstanding doctrine of patent exhaustion provides that the initial authorized sale *of a patented item* terminates all patent rights *to that item*") (emphases added); *Adams*, 84 U.S. at 455 ("the sale by a person who has the full right to make, sell, and use * * * a machine carries with it the right to the use of *that machine* to the full extent to which *it* can be used in point of time") (emphases added); *United States* v. *Univis Lens Co.*, 316 U.S. 241, 251 (1942) (patent exhaustion restrains "the use and enjoyment *of the thing sold*") (emphasis added). This makes sense; as this Court explained decades ago, when a patented item is sold, the seller *receives the consideration for its use* and he parts with the right to "restrict *that use*." *Adams*, 84 U.S. at 456 (emphasis added); *see also Univis*, 316 U.S. at 251.

The Court has also long recognized that separate patent rights may be separately granted. *See Adams*, 84 U.S. at 456 ("The right to manufacture, the right to sell, and the right to use are each substan-

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[39] While each generation of seed may be planted we note that the grain planted by Petitioner is not typically used for this purpose. Indeed, selling grain as seed, without proper labeling, would violate both State and Federal law. *See generally* CHS, Inc. (CHS) Br.; ASA Br. at H. Needless to say, this is not typical grain elevator practice. *Id.*

tive rights, and may be granted or conferred separately by the patentee"); *United States* v. *General Electric Co.*, 272 U.S. 476, 490 (1926); *General Talking Pictures Corp.* v. *Western Elec. Co.*, 305 U.S. 124, 127 (1938). For example, it is not uncommon for a patentee to license another to use or sell—but not to make—its invention. *Id.*

This in turn leads to another, equally settled, corollary to the patent exhaustion doctrine: if only a first copy of a patented article is sold, the patentee has not relinquished rights to future copies. In other words, the right to use and sell a purchased article does *not* include the right to "make a new article." *Aro*, 365 U.S. at 346; *see also Hewlett-Packard* v. *Repeat-O-Type Stencil Mfg. Co.*, 123 F.3d 1445, 1451 (Fed. Cir. 1997) ("The authority to use and sell a purchased device, however, does not include the right to make a new device or to reconstruct one which has been spent"); *Jazz Photo Corp.* v. *ITC*, 264 F.3d 1094, 1102 (Fed. Cir. 2001) ("the ownership of a patented article does not include the right to make a substantially new article").

The seed industry's standard practices are consistent with the Court's long-standing patent law principles. In typical seed industry practice, a patentee grants a farmer the right to plant, cultivate, and harvest the patented seed it purchases such that the seed is spent. The patentee also grants the right to certain uses of the second generation of seeds; for example, a farmer may sell his second-generation seed, which is referred to as grain in this context, to a grain elevator, which in turn sells the grain further down the supply chain to be incorporated into a variety of end products (such as, in the case of soybeans, food, cooking oils, plastics, and biofuels).

But the patentee does not grant that farmer the right to plant the second generation of seeds and grow a third generation. That right to exclude

justifies the patentee's extensive regulatory expenses. It also can be an effective vehicle for enforcing environmentally sound stewardship practices like resistance management, and, in the case of universities, which develop a significant percentage of patented seed technologies, to ensure that their technology is used in accordance with their public mission. *See* Wisconsin Alumni Research Foundation (WARF) Br. at II.

A purchasing farmer thus is entitled to use the original patented seed "to the full extent that it can be used." *Adams*, 84 U.S. at 455. The farmer is entitled to plant the seed, thereby destroying it, and to harvest and sell all that the original seed produces. This Court's case law also supports conferral on that farmer of only the right to make and sell second-generation seeds, but *not* the right to plant or harvest them. *See Adams*, 84 U.S. at 456 (each patent right "may be granted or conferred separately by the patentee"); *General Electric Co.*, 272 U.S. at 490 ("the patentee may make and grant a license to another to make and use the patented article but withhold his right to sell"). And the limitation on creating a third, or further, generation of seed protects the patentee's exclusive right to make an entirely new article. *See Aro*, 365 U.S. at 346. Purchasing grain, planting it, and cultivating a *third* generation of seed is an unauthorized use of that grain, and an unauthorized making of the third-generation seed—both infringing acts. *Id.*

These principles are settled. They balance the incentive to invest in improved technology with the need to ensure that the public benefits from those improvements. And there is currently no exception to them. But Petitioner urges the Court to create one in this case, by holding that purchasing *one* generation of seeds automatically conveys unlimited rights in every *successive* generation of those seeds.

For support, Bowman relies on the Court's most recent patent exhaustion case, *Quanta*, 553 U.S. 617 at 628. Pet. Br. at 34-37. *Quanta*, and the case upon which it primarily relied, *Univis*, involved the test for applying patent exhaustion to the sale of *unpatented* components. In that situation, the Court explained, the unpatented component must "sufficiently embod[y] the patent—even if it does not completely practice the patent—such that its only and intended use is to be finished under the term of the patent." *Id.* at 628. Petitioner attempts to build his argument from this inapposite starting point. But his attempt to rely on *Quanta*'s "substantial embodiment" test only illustrates the confusion created by misapplying this test to *patented* material. Petitioner argues that a first generation of (patented) seed "substantially embodies" all subsequent generations of seed, such that the sale of one generation of seed exhausts all rights in subsequent generations. But there is a fundamental logical flaw in applying a test instructive for a sale of *unpatented* components to that of *patented* components. A patented product always "substantially embodies" the patent. Otherwise it would not be patented. Of course, simply because all copies of a patented article substantially embody the patent does not mean that the sale of one copy exhausts rights in all future copies. Only by misapplying the *Quanta* test to patented products can Bowman arrive at this incorrect conclusion.[40]

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[40] Bowman also argues that *he* did not "make" a third generation of seeds, placing the blame, and infringement liability, on the soybean plant itself. Pet. Br. 42. (contending that "it was the planted soybean, not Bowman, that 'physically connected' all elements of the claimed invention into an 'operable whole'"). In essence, according to Bowman, it's the soybean's fault. If the Court recognizes this as a valid defense, then no patented product that relies upon nature for its assembly, even in part, would ever be infringed. As a result, patents in chemistry,

This is not what the Court intended in *Quanta*. Indeed, *Quanta* and *Univis* both confirm the result that should be reached here: the authorized sale "of a *patented* item" exhausts only the rights in "that item." *Quanta*, 553 U.S. at 625 (emphasis added); *see also Univis*, 316 U.S. at 251-252. There is no justification in the Patent Act, this Court's precedent, or public policy for providing less protection to patented seed technology. And as we next explain, if an exception is created, the seed industry, and the public, will suffer.

III. REMOVING PROTECTION FOR EACH GENERATION OF PATENTED SEED WOULD DEVASTATE THE NATION'S SEED INDUSTRY, EVAPORATE INVESTMENT IN PATENTED SEED TECHNOLOGY, AND DEPRIVE THE PUBLIC OF THIS TECHNOLOGY'S CURRENT AND FUTURE BENEFITS.

Under Petitioner's rule, seed (and any other technology that replicates during a foreseeable use) would be entitled to a significantly reduced form of patent protection compared to every other technology. For, under Petitioner's rule, a purchaser of one generation of seeds would be able to indefinitely generate successive generations of seed with the same patented improvements. The holder of the patent—the initial seller—would be unable to stop the farmer, or a competitor, from using this second generation to produce future generations of the improved seed at an accelerated rate. Competitors would be able to perform research with the improved seed, piggybacking on the original improvements without compensating the patentee. Foreign competitors could purchase second-generation seed, produce

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biotechnology, and seeds, to name just a few, would be severely undermined, if not entirely worthless.

future generations or improved technology overseas and then export it back into the United States—all without paying any licensing fees. In this manner, a mere handful of sales could effectively saturate the entire market in only a few years, supplying a patentee's direct competitors with patented technology free of charge and with no further conditions on use.

This lack of control over successive generations of seed would severely harm the seed industry. Firms that have developed patented seed technology would immediately stand to lose hundreds of millions of dollars in revenues. They would also lose any competitive advantage that their patent protection would have afforded them in developing further improvements. Seed technology developed in public universities with taxpayer money would be freely available for any use without respect for the public mission of such universities. Patentees would be unable to enforce environmentally sound stewardship practices. And hundreds of smaller seed companies that license patented seed technology—and whose entire corporate livelihoods depend on the right to incorporate this technology into their own seed varieties—would be at serious risk of going out of business.

The current patent protection afforded seed is widely credited for the dramatic growth of private investment in and the development of improved seed technology.[41] By restricting the use of successive generations of seed, a seed developer is able to make its patented technology available to farmers and

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[41] Jorge Fernandez-Cornejo, *et al.*, *Have Seed Industry Changes Affected Research Effort?*, Amber Waves Vol. 2 Issue 1, at 17 (Feb. 2004), *available at* http://www.ers.usda.gov/AmberWaves/February04/Features/HaveSeed.htm; *Intellectual Property and Genetically Modified Seeds* at 160, 178; Brian D. Wright, *Plant Genetic Engineering and Intellectual Property Protection*, Agric. Biotechnology in Cal. Series, Pub. 8186 at 3-5.

other end-users at reasonable prices.[42] But if patentees cannot protect their patents once sold, such that their patented seeds are replicated and spread in just a few short growing generations, investment in enhanced seed technology will evaporate. The few developers remaining would need to look to a smaller and smaller pool of first-time (and only-time) buyers to recoup their R&D and regulatory costs and earn a return on its investment, forcing the price of seed sky-high, and forcing farmers out of that market. Private firms would thus have little incentive to invest the substantial resources required to develop improved seed technology, much to the detriment of farmers and the public. Indeed, without the right to exclude, patentees would not invest the resources necessary to maintain the multiple regulatory approvals required for certain seed technologies, approvals on which the entire downstream supply chain relies. Without these approvals, both domestic trade and U.S. export markets would be—and this is a *best*-case scenario—severely disrupted.

The seed industry's current success demonstrates that this Court's precedent correctly balances the incentive to improve technology with the need to ensure the public benefits from any improvements. The Court should not disrupt that delicate balance. And it should decline Petitioner's invitation to adopt an exception to its settled patent precedent in order to provide less protection to technologies, such as seed, that replicate through foreseeable use.

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[42] Press Release, Iowa State Univ., College of Agric., *Consumers Benefit from Strong, Enforceable Intellectual Property Protection in Seed Industry, According to Iowa State Study* (Oct. 31, 2005), *available at* http://www.ag.iastate.edu/news/releases/99/ (strong patent protection "encourage[s] private agricultural seed companies to invest in research and development that will bring new technologies to farmers around the world").

CONCLUSION

For the foregoing reasons, and for those in Respondents' brief, the Federal Circuit's judgment should be affirmed.

Respectfully submitted,

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AMICUS CURIAE BRIEF

No. 11-796

In the Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, ET AL.,

Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF OF AMERICAN SOYBEAN ASSOCIATION, ILLINOIS SOYBEAN ASSOCIATION, INDIANA SOYBEAN ALLIANCE, IOWA SOYBEAN ASSOCIATION, KANSAS SOYBEAN ASSOCIATION, KENTUCKY SOYBEAN ASSOCIATION, MICHIGAN SOYBEAN ASSOCIATION, MINNESOTA SOYBEAN GROWERS ASSOCIATION, MISSISSIPPI SOYBEAN ASSOCIATION, MISSOURI SOYBEAN ASSOCIATION, NEBRASKA SOYBEAN ASSOCIATION, NORTH DAKOTA SOYBEAN GROWERS ASSOCIATION, OHIO SOYBEAN ASSOCIATION, TENNESSEE SOYBEAN ASSOCIATION, VIRGINIA SOYBEAN ASSOCIATION, AND WISCONSIN SOYBEAN ASSOCIATION, NATIONAL CORN GROWERS ASSOCIATION, NATIONAL ASSOCIATION OF WHEAT GROWERS, AMERICAN SUGARBEET GROWERS ASSOCIATION, AND GROWERS FOR BIOTECHNOLOGY AS *AMICI CURIAE* IN SUPPORT OF RESPONDENTS

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US EPA Greenhouse Gas Equivalencies Calculator, http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results (last viewed Jan. 21, 2013) 28

STATEMENTS OF INTEREST OF AMICUS CURIAE[1]

American Soybean Association (ASA) is the national trade association representing U.S. soybean farmers on domestic and international issues of importance to the soybean industry. ASA's advocacy and representational efforts are made possible through the voluntary membership of approximately 22,000 farmers in 31 states. ASA represents the interests of 280,000 American soybean farms. ASA strongly supports the development of new biotechnology-derived traits for soybeans that will enhance efficiency and profitability by controlling weeds and pests, providing more competitive cropping opportunities, and permitting soybean farmers to meet domestic and international food, feed, and fuel needs. Weeds are the most important pest complex facing soybean farmers and the introduction of glyphosate-resistant soybeans dramatically changed how soybean farmers addressed weed management.

Illinois Soybean Association, Indiana Soybean Alliance, Iowa Soybean Association, Kansas Soybean Association, Kentucky Soybean Association, Michigan Soybean Association, Minnesota Soybean Growers Association, Mississippi Soybean Association, Missouri Soybean Association, Nebraska Soybean Association,

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[1] Pursuant to Rule 37(a), counsel of record for both parties received timely notice of amici curiae's intention to file a brief. The parties have consented to the filing of this brief. No counsel for any party in this case authored this brief in whole or in part, and no person or entity other than amici curiae made a monetary contribution to its preparation or submission.

North Dakota Soybean Association, Ohio Soybean Association, Tennessee Soybean Association, Virginia Soybean Association, and Wisconsin Soybean Association (State Soybean Associations) represent soybean growers in their respective states and are affiliated with the American Soybean Association. The State Soybean Associations support the development of seed biotechnology and believe that farmers will suffer in the event that patent protection for second and subsequent generations of genetically modified soybeans is not preserved.

National Corn Growers Association (NCGA) is a non-profit trade association that represents 37,000 corn farmers nationwide, 48 affiliated state corn organizations and the interests of more than 300,000 growers who contribute through 23 state corn checkoff programs. NCGA represents its members' concerns before the federal executive, legislative and judicial branches on intellectual property and other issues and has historically advocated for fair access to technology. NCGA is a leader in ensuring that technology is introduced with minimal disruption to markets and submits that early season weed control is vital to improved corn yields and profitability.

National Association of Wheat Growers (NAWG) is a federation of 21 state wheat grower associations that represents wheat producers before Congress, the federal courts, USDA and other federal agencies. NAWG is a grower-governed and grower-funded entity that advocates on issues ranging from federal farm policy, trade, environmental regulation, and agricultural research to sustainability. NAWG supports the protection of intellectual property,

including education about the importance of complying with the Plant Variety Protection Act, seed contract and stewardship provisions, and enforcement of those provisions when necessary. NAWG members understand that constantly evolving threats to wheat production from diseases, pests, weeds and weather patterns can only be addressed through long-term investments in research and development of new varieties. While there are currently no commercialized varieties of genetically modified wheat, NAWG recognizes that strong intellectual property protections are critical to encouraging seed companies to make the investments necessary to bring biotech wheat to the marketplace.

American Sugarbeet Growers Association (ASGA) is an organization of approximately 10,000 sugar beet growers, primarily family farmers, in all eleven sugar beet-growing states. ASGA's members grow virtually all of the commercially planted and harvested sugar beets in the United States. Sugar produced from sugar beets accounts for more than half of the domestically grown sugar in the United States. Since 2009, more than 90% of the sugar beets planted and harvested by ASGA members have been improved with a biotech trait. Elimination of patent protection for seed biotechnology will have substantial negative impacts on the sugar beet industry.

Growers for Biotechnology (Growers) is a non-profit organization of farmer-producers who believe the use of biotechnology-enhanced seed is a critical tool in modern agriculture. The use of genetically-enhanced seed is vital to enabling American farmers to produce a high quality and bountiful harvest, while reducing

tillage, pesticide use, and topsoil erosion. Continued investment in research and the ongoing introduction of new varieties is critical to meeting the food, fiber, and fuel needs of a rapidly growing global population. Growers recognizes that seed developers are entitled to protection of their intellectual property and a fair return on their investments and believes that fee circumvention by farmers should not be countenanced.

ASA, State Soybean Associations, NCGA, NAWG, ASGA, and Growers (Amici) respectfully suggest that application of the patent exhaustion doctrine to second and subsequent generations of soybeans will result in profound, adverse impacts on soybean growers and other farmers. Amici offer this brief in support of the Respondents to help the Court understand the broad agronomic and weed control implications that plant biotechnology has on soybean and other commodity crop farmers, environmental sustainability, global nutrition and advances in plant genetics research. Amici submit that the patent exhaustion doctrine is inapplicable to a farmer's unlicensed growing of new crops that contain patented traits.

SOYBEANS

The greatest service which can be rendered to any country is to add a useful plant to its culture.
– Thomas Jefferson

Weeds are the most significant economic challenge to global food production. Weeds compete with soybeans and other commodity crops for light, water and nutrients that are essential to production. These unwanted plants have serious ramifications for

mankind, ranging from human nutrition and health to the environment to our pursuit of recreation.[2] Improvements in weed management are critical to increasing crop yields. This case presents a matter of great importance to America's farmers and the decision will have acute impacts on how agricultural producers will control weeds and sustainably meet the nutritional demands of a growing global population.

Amici respectfully submit that without adequate intellectual property protection, the seed industry will lack sufficient incentive to develop improved genetic traits for field crops. Patent protection for new seed technologies is vital for advancements in biotechnology. Although soybeans and other crops have been cultivated for centuries, advances in plant genetics were historically stifled by a lack of incentives to invest in new technologies and breeding techniques.

During the past few decades, enormous progress has been made in improving new seed varieties based upon the protections initially afforded by the Plant Variety Protection Act of 1970. Genetic innovation in soybeans grew exponentially, like Jack's magical beanstalk, after this Court's 1980 decision in *Diamond v. Chakrabarty*, 447 U.S. 303, which confirmed the applicability of utility patent protection to qualifying organisms.

No other country possesses the United States' prolific record in developing new crop varieties.

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[2] D.C. Bridges, *Impact of Weeds on Human Endeavors*, WEED TECHNOLOGY, Vol. 8, 392-95 (1994).

Without the protection of intellectual property afforded by the U.S. legal system, seed and biotechnology companies would not have undertaken the expensive and time-consuming research necessary to improve existing plant technology.

Innovation spurred by the *Chakrabarty* decision resulted in impressive gains in nutrition and environmental stewardship. Since 1980, total domestic soybean production has increased 96% and yields per acre have increased 55%.[3] Soybean production has also become more environmentally friendly. On a per-bushel basis, the land needed to produce a bushel of soybeans declined by 35%, soil erosion decreased 66%, irrigation water applied declined by 42%, fuel consumption decreased 42%, and greenhouse gas emissions declined by 41%.[4]

Amici urge this Court to uphold the Federal Circuit's decision in *Monsanto Co. v. Bowman*, Pet. App. 1a-18a. Upholding the decision below will ensure that technological innovation in crop breeding and genetic traits continues unhindered, thereby leading to the development of more productive, manageable, and environmentally-sustainable varieties. In contrast, permitting unrestricted replication of soybean biotechnology will have a wide variety of harmful effects on Amici, other farmers, and society as a whole.

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[3] Keystone Alliance for Sustainable Agriculture, *Environmental and Socioeconomic Indicators for Measuring Outcomes of On-Farm Agricultural Production in the United States*: Second Report (Version 2) at 83, (Dec. 2012), *available at* www.fieldtomarket.org.

[4] *Id.*

A loss of patent protection is likely to result in the loss of substantial research dollars currently devoted towards developing improved plant varieties and would foster an environment where farmers that use certified, high-quality seed will be required to compete with producers that adopt Petitioner's peculiar license fee circumvention scheme. It is also likely that farmers, seed sellers, and downstream grain buyers will encounter burdensome additional licensing and contractual requirements in the event that Mr. Bowman's unorthodox practice is given this Court's imprimatur.[5]

A. Soybeans Are One of The World's Principal Food Crops

Soybeans are grown on more than 280,000 farms in the United States. In 2012, 93% of domestic soybeans were grown using Monsanto's glyphosate-resistant technology, which manages weeds and enhances environmental stewardship. In 2012, soybeans were planted on approximately 77 million acres in 31 states, making the legume the second-most planted field crop in the United States.[6] United States soybean sales topped $37 billion in 2011, accounting for 18% of crop

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[5] Resp. Br. 53-54.

[6] USDA National Agricultural Statistics Service (USDA NASS) *Acreage* 15, http://usda01.library.cornell.edu/usda/current/Acre/Acre-06-29-2012.pdf (June 12, 2012).

sales and 10% of all agricultural commodities produced in the country.[7]

Soybeans are America's most valuable field crop export and a major contributor to agriculture's positive trade balance. In 2011, exports topped $21.5 billion, accounting for over 60% of soybean receipts and 18% of total agricultural exports.[8] Since 1996, when glyphosate-resistant technology was introduced, domestic soybean acreage has increased from 64 million acres to 75 million acres in 2011.[9] During that same timeframe, soybean exports increased from 882 million bushels to 1.3 billion bushels.[10]

The history of soybean cultivation originated in northern China over three thousand years ago.[11]

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[7] Ted Covey & Kevin Patrick, *Cash Receipts By Commodity Group*, USDA Economic Research Service (USDA ERS) http://www.ers.usda.gov/datafiles/Farm_Income/Historical and State Level DataUSFarm_Income_and_Wealth_Statistics/Cash_receipts/US_tables_include_details/cashreceipts1924tolatest.xls. (Aug. 28, 2012).

[8] American Soybean Association, *U.S. Soy Crop Statistics*, Soystats 2012, http://www.soystats.com/2012/Default-frames.htm (last viewed Jan. 21, 2013).

[9] USDA NASS Quick Stats, www.quickstats.nass.usda.gov (last viewed Jan. 21, 2013).

[10] American Soybean Association, *Exports & Ending Stocks*, Soystats 2012, http://www.soystats.com/2012/Default-frames.htm (last viewed Jan. 21, 2013).

[11] Lance Gibson & Garron Benson, *Origin, History, and Uses of Soybean (Glycine max)*, Iowa State University Department of

Soybean production in Europe began after 16th century visitors to China and Japan took notice of its varied uses for food and returned home with seeds.[12] Soybeans were introduced to North America when a Georgia farmer began cultivating the legume in 1765.[13]

Unlike corn, wheat, and oats, soybeans were not a major agricultural crop in the United States until the middle of the 20th century.[14] While useful in preserving soil quality when added to crop rotations

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Agronomy, (March 2005) http://www.agron.iastate.edu/courses/agron212/Readings/Soy_history.htm.

[12] T. Hymowitz, *On the Domestication of the Soybean*, ECONOMIC BOTANY, Vol. 24, Iss. 4 at 408–09 (Dec. 1970). Occasionally referred to as the "cow of China," soybeans were utilized to make soy paste, tofu, Miso, soy sauce, and soy milk. *Id.* at 409.

[13] William Shurtleff & Akiko Aoyagi, *History of Soy in the United States 1766-1900*, SoyInfo Center, http://www.soyinfocenter.com/HSS/usa.php (Last viewed Jan. 21, 2013). During the late 1760s, Samuel Bowen began exporting soy sauce and received an English patent. In 1770, while serving as an agent for Pennsylvania, Benjamin Franklin sent soybean seeds to a Philadelphia botanist for cultivation. *Id.*

[14] USDA NASS Quick Stats, www.quickstats.nass.usda.gov (last viewed Jan. 21, 2013). In 1924, 1.6 million acres of soybeans were planted in the United States. 77 million acres were planted domestically in 2012. The soybean was popular with plant scientists and agricultural visionaries. George Washington Carver is credited as the first scientist to recognize the soybean as a "complete protein" and an edible oil source for humans. Prior to Carver's research, soybeans were primarily used as animal feed. *See* Kurt Nolte, *Soybeans*, University of Arizona Cooperative Extension Service, http://cals.arizona.edu/fps/sites/cals.arizona.edu.fps/files/cotw/Soybeans.pdf (last viewed Jan. 21, 2013).

(typically with corn, wheat, or cotton), soybean production was limited prior to World War II. The war effort created a sizeable demand for domestically-sourced lubricants and edible oils, for which soybeans are well-suited. Between 1941 and 1942, the United States doubled its soybean production and became the world's largest producer of soybeans.[15]

B. The USDA Free Agricultural Seed Program Stunted Progress in Genetic Research

The federal government, in an effort to improve the agricultural productivity of a growing nation, played a major role in crop seed distribution during the 19th and early 20th centuries. Starting in 1819, William Crawford, President Monroe's Treasury Secretary, asked American consuls to send seeds from useful foreign plants to customs collectors at U.S. ports for free distribution to American farmers. In 1836, Henry Ellsworth, first Commissioner of the State Department's newly organized Patent Office, obtained the first congressional appropriation directed to agriculture -- for the free distribution of agricultural seed packets, including soybeans, to American farmers. For the next 26 years, the Patent Office was the center of governmental agricultural seed distribution activity.[16]

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[15] Shurtleff & Aoyagi, *History of World Soybean Production and Trade – Part 2*, SoyInfo Center, http://www.soyinfocenter.com/HSS/production_and_trade2.php (last viewed Jan. 21, 2013).

[16] *See* Debra L. Blair, *Intellectual Property Protection and its Impact on the U.S. Seed Industry*, 4 DRAKE J. AGRIC. L. 297, 299-302 (1999).

The free seed distribution program was placed under the jurisdiction of USDA upon its establishment in 1862 and quickly grew to an enormous size. By 1878, approximately one-third of USDA's budget was devoted to collecting and distributing free seeds. The federal government's largess was not perpetual and by 1893, USDA Secretary J. Sterling Morton was calling for the end of the "gratuitous" distribution of seed.[17] Nonetheless, Congress did not terminate the free seed program until 1924.[18]

Early seed breeders had little incentive to make costly investments in developing more productive plants because the free seed program crowded private breeders from the marketplace. Additionally, without intellectual property protection, seed breeders had little control over the fate of their genetic material; purchasers were not barred from saving seed or from selling the new seeds they grew to others for planting purposes without compensating the breeder. As a result, little progress was made in increasing seed productivity. For example, between 1866 and 1930, the average national yield for corn decreased from 24.3 to 20.5 bushels per acre.[19]

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[17] *Id.* at 301-03. Morton considered free seed distribution an expensive service fraught with problems that the developing private seed industry was better equipped to handle.

[18] *Id.* at 303.

[19] USDA NASS Quick Stats, www.quickstats.nass.usda.gov (last viewed Jan. 21, 2013).

The federal government's exit from the seed distribution business in 1924 created space for our nation's nascent seed industry to grow and innovate. In 1926, Henry A. Wallace, future Secretary of Agriculture and Vice-President, established Hi-Bred Corn Co. (Pioneer), which introduced hybrid corn on a commercial scale. Hybrid corn, which led to substantial increases in yields, was initially unprotected by federal intellectual property law.

Hybrid corn, by its nature, cannot be profitably replanted.[20] Thus, corn farmers purchase seed on an annual basis. Because of these annual purchases, seed companies were able to invest in research, reaping impressive results for America's farmers.[21] By 1950, 80% of corn grown in the United States utilized hybrid seeds and yields increased from 26 bushels per acre in

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[20] Open-pollinating crops, such as corn and alfalfa, reproduce by exposing the female organs of one plant to the pollen (male) of another plant. This combination results in heterozygous offspring, meaning that the offspring expresses genetic traits of both parent crops.

Commercial hybrid lines are produced by crossing two inbred parent lines. Hybrid varieties express "hybrid vigor" or "heterosis," which is the improved or increased function of any biological quality in a hybrid offspring. The offspring of hybrid varieties cannot be replanted profitably because the hybrid vigor is not uniformly expressed in second-generation hybrid crops, causing yields to suffer. *See* Martin J. Chrispeels and David E. Sadava, PLANTS, GENES, AND CROP BIOTECHNOLOGY 368–69 (Second Ed. 2003).

[21] Julian M. Alston, et al., PERSISTENCE PAYS: US AGRICULTURAL PRODUCTIVITY GROWTH AND THE BENEFITS OF PUBLIC R&D SPENDING 252 (2010).

1926 to 38 bushels per acre in 1950 to 147 bushels per acre in 2011.[22]

Unlike corn, "self-pollinating" crops, such as soybeans and wheat, are not grown commercially as hybrids.[23] Instead, the progeny of self-pollinating crops, which produce nearly genetically identical offspring, can be planted as seed in subsequent crops.[24] Thus, without intellectual property protection, soybean seeds can be replanted for multiple generations, providing little incentive for private companies to invest in seed research.

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[22] USDA NASS Quick Stats, www.quickstats.nass.usda.gov (last viewed Jan. 21, 2013).

[23] Soybeans are "self-pollinators." Self-pollinating crops have "perfect flowers," meaning that the male and female reproductive organs are located in the same flower. Pollen, the male component, fertilizes the ovules, the female component, in the same flower. This makes it very difficult to introduce "outside" genetics, resulting in an inbred plant that produces "homozygous" offspring, which are genetically identical, or nearly identical to the parent plant. Rice, wheat, barley, and peanuts are also self-pollinators. *See* Chrispeels & Sadava, *supra* note 20 at 368–69.

[24] Self-pollinating crops are not conducive to cross-pollination. Cross-contamination between conventional and glyphosate-resistant soybeans is minimal and does not occur if soybeans are planted more than 10.5 meters apart. Y. Yoshima, et al., *Gene Flow from GM Glyphosate-Tolerant to Conventional Soybeans Under Field Conditions in Japan*, ENVIRON. BIOSAFETY RES. Vol. 5, No. 3, 169–73 (2006). Any purported concerns about gene flow cross-contamination is largely, if not completely, academic in nature. *See* Center for Food Safety and Save Our Seeds ("CFS"), Br. 6–7.

C. Prior to 1970, Self-Pollinating Plant Varieties Lacked Clear Intellectual Property Protection

The United States Constitution provided Congress with the power "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."[25] Early patent laws did not contemplate germplasm[26] and intellectual property protection for plants was not recognized prior to 1930, when Congress enacted the Plant Patent Act (PPA).[27] However, the PPA expressly excluded sexually reproducing plants and tubers, thereby rendering soybeans, corn, wheat, potatoes, and sugar beets unpatentable. Although hybrid corn breeders have been able to protect inbred parent lines through state trade secret laws since the late 1930s, this patchwork of state laws proved difficult and expensive to enforce.[28]

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[25] U.S. CONST. art. I, § 8, cl. 8.

[26] "Germplasm" is a general reference to all of the genetic information, or genes, in a plant.

[27] *See* Blair, *supra* note 16, at 310; 35 U.S.C. §§ 161-164.

[28] *See* Blair, *supra* note 16, at 308-310. Trade secret laws require that the protected information be held confidentially and not disclosed to the public. Thus, trade secret laws could apply to inbred parent lines of hybrid crops because they are never sold to the public.

Due to their self-replicating nature, self-pollinating crops are not amenable to trade secret protection.[29]

Congress, recognizing a global effort to provide intellectual property protection for field crops, enacted the Plant Variety Protection Act (PVPA) in 1970.[30] The PVPA allows breeders of new or distinct sexually reproducing plant varieties to register them and receive twenty years' protection from unauthorized sale, reproduction, import or export.[31] While federal law prevented farmers from saving and selling PVPA-protected seed to a downstream buyer as seed, the PVPA expressly permitted farmers to save enough seed to replant a subsequent crop.[32] The saved seed exemption allowed farmers to avoid purchasing seed annually. Furthermore, the PVPA's "breeder's exemption" allowed seed to be saved for research.[33] Competing seed companies could save PVPA-protected seeds and use the progeny to develop and receive PVPA certificates for new varieties. Although the PVPA provided some protection for plant breeders, these exemptions limited incentives for investment in new plant technology. Absent clear utility patent

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[29] *Id.* The genetic makeup of the parent soybean is nearly identical to the offspring sold to the public.

[30] *Id.* at 311-12; 7 U.S.C. §§ 2321-2582.

[31] *Id.* at 312-13.

[32] 7 U.S.C. § 2543; *see also Asgrow Seed Co. v. Winterboer*, 513 U.S. 179, 192-93 (1995).

[33] *Id.* at § 2544.

protection, soybean breeders had little incentive to invest resources in developing new varieties.

D. *Chakrabarty* Clarified That Utility Patent Protection Could Be Applied to Seeds

The seed development landscape shifted dramatically following the *Chakrabarty* decision. After this Court confirmed that living things could be protected by utility patents, plant breeders began developing new varieties and traits with the confidence that their intellectual property would be protected. Two decades later, this Court extended *Chakrabarty*, clarifying that genetically modified crops, including the patented soybeans at issue in this case, were eligible for utility patent protection under 35 U.S.C. section 101. *J.E.M. Ag Supply v. Pioneer Hi-Bred Intern., Inc.*, 534 U.S. 124, 131-32 (2001).

Breeders responded vigorously to the new assurances of intellectual property protection. In 1979, the year before this Court decided *Chakrabarty*, private U.S. expenditures on seeds and genetic trait research totaled $146 million in inflation-adjusted terms.[34] By 1982, this figure more than doubled to $305 million. The introduction of genetically modified traits in the mid-1990s spurred an expansive increase in private seed research. In 1994, annual private U.S.

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[34] Paul W. Heisey & Keith O. Fuglie, *Research Investments and Market Structure in the Food Processing, Agricultural Input, and Biofuel Industries Worldwide* at 9, USDA Economic Research Service, ERR-130 (Dec. 2011).

expenditures rose to nearly $634 million.[35] By 2010, this figure more than tripled to nearly $2 billion.[36] These investments resulted in the discovery and implementation of genetic traits that improve weed management and promote environmental sustainability.

Seed and genetic trait development has surpassed all other agricultural inputs in terms of research intensity.[37] Intellectual property protection provided by the PVPA and utility patents provided incentives for private seed developers and genetic researchers to create innovative and highly productive crop varieties and genetic traits.

Meanwhile, public expenditures on plant genetics and breeding research, once the backbone of our nation's seed germplasm resources, leveled off in the 1970s and began to decrease by the mid-1990s.[38] Traditionally, much of the burden for funding crop genetics research fell on federal and state governments. Bolstered by clear utility patent protection, private seed and genetic trait researchers have filled in these funding gaps.

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[35] *Id.* at 9, 39. Inflation-adjusted to constant 2006 U.S. dollars.

[36] *Id.*

[37] *Id.* at 25.

[38] *Id. See also* Paul W. Heisey, et al., *Public Sector Plant Breeding in a Privatizing World*, USDA Economic Research Service, AIB-777, at 6 (Aug. 2001).

E. Farmers Rapidly Adopted Genetically Modified Soybeans to Improve Weed Management

In 1996, the soybean seed market experienced a sea change with the commercial introduction of Roundup Ready® soybeans. Although Roundup Ready® seed is more expensive than conventional seed, soybean farmers readily adopted glyphosate-resistant technology because it simplified weed management. By 1998, two years after its commercial debut, 38% of American soybean farmers were already using glyphosate-resistant soybeans.[39] By 2000, a majority (54%) of domestic soybeans contained biotechnology and by 2012, this figure rose to 93%.[40]

Soybean farmers' swift adoption of glyphosate-resistant technology attests to the value of biotechnology to growers. Although planting soybeans containing biotechnology requires annual purchases of seed and forbids the saving of seed, its nearly universal use lends strong support for the notion that American farmers are willing to pay for innovative technology if doing so results in improved efficiency, yields, and profits.

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[39] Janet Carpenter and Leonard Ganassi, *Herbicide Tolerant Soybeans: Why Growers Are Adopting Roundup Ready Varieties*, J. AGROBIOTECH. MGMT & ECON., Vol. 2, No. 2, *available at* http://agbioforum.org/v2n2/v2n2a02-carpenter.htm.

[40] Jorge Fernandez-Cornejo, *Adoption of Genetically Engineered Crops in the U.S.*, USDA ERS, www.ers.usda.gov/datafiles/Adoption_of_Genetically_Engineered_Crops_in_the_US/alltables.xls (July 3, 2012).

As the share of tax dollars devoted to public research continues to decrease, private research and development becomes more critical. Furthermore, farmers understand that payment of license fees is tantamount to a down payment on future technology which will enable farmers to become more productive and efficient, by managing weeds and pests, resisting disease, improving yields, and providing substantial environmental benefits.

F. Plant Biotechnology Is the Future of American Agriculture

The impressive growth in private research expenditures has already brought many new varieties and genetic traits to the marketplace. However, crop biotechnology remains a relatively new phenomenon and the seed research pipeline contains several new genetic traits that will be released in the near future.

For soybeans, these innovations are expected to make crop management more efficient and environmentally sound, increase yields and improve the legume's nutritional characteristics.[41] For example, in 2014, Monsanto is expected to introduce a "stacked" soybean variety to combat weed species that have

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[41] While the assertion that "[n]o commercial transgenic crop has been engineered for increased yield, nutritional enhancement, increased fertilizer use efficiency, or many other promised traits." is technically accurate, the myopic tone ignores the new plant traits that are on the verge of commercialization. CFS Br. 3.

developed resistance to glyphosate.[42] Additionally, researchers are developing seed varieties stacked with genetic traits that will result in the development of soybeans with reduced saturated fat and trans fat levels, increased Omega-3 levels, improved yields, and genetic resistance to insects and pervasive diseases.[43] Pioneer, through the use of gene mapping technology, intends to introduce soybeans with improved yields.[44] Bayer, Dow, Pioneer, and Syngenta are each developing traits designed to provide genetic insect resistance and increased herbicide tolerance.[45]

Soybeans are hardly the only crop benefitting from biotechnology research. For example, stacked corn varieties that are resistant to glyphosate and the European Corn Borer, a major insect pest, are already available. Future varieties will likely include genetic

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[42] Monsanto Co., *Soybean Research & Development Pipeline*, http://www.monsanto.com/products/Pages/soybean-pipeline.aspx (last viewed Jan. 21, 2013). "Stacked" means the crop contains more than one genetically modified trait. Stacking is common in corn and is expected to be prevalent in other crops.

[43] CropLife International, *Plant Biotechnology Pipeline* at 2, *available at* www.croplife.org/view_document.aspx?docId=3457 (May 2011).

[44] Pioneer Hi-Bred, *Accelerated Yield Technology System*, https://www.pioneer.com/home/site/us/products/soybean/seed-traits-technologies-soybeans/ayt-system/ (last viewed Jan. 21, 2013); *see also* Karen McMahon, *Seed Pipeline: Seed Companies Stack Soybean Traits in Future Products*, FARM INDUSTRY NEWS, http://farmindustrynews.com/soybean-varieties/seed-pipeline-seed-companies-stack-soybean-traits-future-products (Aug. 29, 2011).

[45] *See* CropLife International, *supra* note 43, at 2.

traits with resistance to drought, stress, and a wider spectrum of herbicides, with a higher nutritional content, and which more efficiently utilize nitrogen fertilizer.[46] Cotton producers currently use stacked insect-tolerant and glyphosate-resistant varieties, and a drought-tolerant variety is anticipated in the future.[47] Sugar beet growers use glyphosate-resistant varieties and expect to soon have access to varieties that are genetically modified to improve yields.[48] Biotechnology companies are also developing wheat varieties that are genetically modified to increase yields, maximize the efficient use of nitrogen fertilizer, withstand beneficial herbicides, and improve nutritional quality.[49] Biotechnology is an issue of great importance to wheat growers given that there are currently no commercially available genetically modified wheat varieties.

There can be no doubt that if intellectual property protections remain in place, biotechnology will continue to play a substantial role in crop improvement. These advances are largely premised upon the continuation of private research conducted by seed breeders. Absent utility patent protection, little incentive will exist for biotechnology companies to conduct research. A determination that utility patent protection is unavailable to second and subsequent generations of soybean seeds containing Monsanto's patented

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[46] *See id.* at 1.

[47] *Id.* at 3.

[48] *Id.* at 6.

[49] *Id.*

technology is no different than an endorsement of Petitioner's fee circumvention scheme. Farmers, like other consumers of intellectual property, cannot be permitted to exploit the self-replicating nature of soybeans to conduct a practice which is an end run around patent law.

G. The Use of Crop Biotechnology Promotes Environmental Sustainability

Crop biotechnology provides a multitude of benefits, not only to farmers, but to society as a whole. Genetically modified crops have triggered changes in agricultural production practices that improve soil conservation and water quality, reduce greenhouse gas releases, improve carbon sequestration,[50] and reduce usage of persistent pesticides.[51]

Sustainability is not merely a buzzword that receives lip service from the agricultural community. The primary principle motivating "sustainable agriculture" is the utilization of production practices that meet current food demands, while conserving resources to ensure that producers can meet future food demands.[52] The Earth's population recently

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[50] Carbon sequestration is the process of the biological capture and long-term storage of atmospheric carbon dioxide.

[51] "Persistent" pesticides are stable in the environment and resist decay by natural processes.

[52] In 7 U.S.C. §3103(19), Congress defined "sustainable agriculture" as:

exceeded 7 billion and is expected to reach 9.3 billion by 2050.[53] At the same time, the land available for agricultural purposes is decreasing.[54] Feeding a growing world with dwindling resources requires the adoption of a comprehensive approach to ensure this daunting challenge can be met.

American farmers do not view genetically modified crops as a panacea to all challenges facing agriculture in the 21st century. However, crop biotechnology -- when used in concert with advances in conventional

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> An integrated system of plant and animal production practices having a site-specific application that will, over the long term –
>
> (A) satisfy human food and fiber needs;
> (B) enhance environmental quality and the natural resource base upon which the agriculture economy depends;
> (C) make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls;
> (D) sustain the economic viability of farm operations; and
> (E) enhance the quality of life for farmers and society as a whole.

[53] CIA, *World: People and Society*, CIA World Factbook, https://www.cia.gov/library/publications/the-world-factbook/geos/xx.html (Last viewed Jan. 21, 2013); Press Release, United Nations, World Population to Reach 10 Billion if Fertility in all Countries Converges to Replacement Levels (May 3, 2011), *available at* http://esa.un.org/unpd/wpp/Other-Information/Press_Release_WPP2010.pdf.

[54] UN FAO, *FAOSTAT*, http://faostat.fao.org/ (last viewed January 21, 2013). The global area of agricultural land decreased more than 1% between 2000 and 2009.

genetics, developments in equipment, improved herbicides and pesticides, and increased adoption of conservation production practices -- will ensure that American farmers continue to increase productivity, cause fewer adverse environmental impacts and meet the nutritional needs of a rapidly increasing world population. Without question, crop biotechnology is a critical player in modern sustainable agriculture.[55]

Herbicide-resistant technology has enabled farmers to increasingly adopt conservation tillage or no-till practices.[56] Prior to the introduction of glyphosate-resistant soybeans, methods of weed control typically included selecting plant varieties that crowd out weeds, mechanical removal through tillage, removal by physical hand labor, and the spot-specific application of chemical herbicides.

Non-genetically modified soybeans were, and continue to be, grown primarily with conventional tillage practices, which results in exposing bare soil and incorporating weeds and crop residue into the ground. This method requires multiple passes of

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[55] The United States Agency for International Development (USAID) recognizes the critical role that biotech traits will play in meeting global nutritional challenges. For example, USAID is a partner in developing insect resistant eggplants and cowpeas, virus-resistant papaya, bananas, and peanuts, and biofortified West African staple crops. *See* USAID, *Biotechnology Programs*, http://transition.usaid.gov/our_work/agriculture/pdfs/2011/biotech_flyer_english.pdf (last viewed Jan. 23, 2013).

[56] R. Derpsch, et al., *Current Status of Adoption of No-Till Farming in the World and Some of its Main Benefits.* INT'L J. AGRI. & BIOLOGICAL ENG'R. 3: 1–25 (2010).

primary and secondary tillage and necessitates the use of a variety of herbicides to control weeds. In a conservation tillage system, because the primary tillage step of turning the soil over for full incorporation is avoided, a larger amount of a prior season's crop residue remains on the soil surface than with conventional methods, reducing soil erosion and fuel use. In a no-till system, soil erosion is virtually eliminated because the only disturbance to the soil is where the seed is planted.

Although conservation tillage was promoted prior to the introduction of herbicide-resistant technology, its adoption was limited. For example, in 1995, prior to the introduction of glyphosate-resistant soybeans, only 27% of soybeans were grown in a no-till system.[57] Because of the availability of glyphosate-resistant technology, farmers have shifted towards no-till and conservation tillage practices.[58] By 2009, 50% of soybeans were grown with no-till practices.[59] Overall, nearly 90% of soybeans are grown in some form of a reduced-till, conservation tillage, or no-till system.[60]

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[57] John Horowitz, et al., *"No-Till" Farming is a Growing Practice* at 6, USDA Economic Research Service, EIB 70 (Nov. 2010).

[58] National Research Council, *The Impact of Genetically Engineered Crops on Farm Sustainability in the United States* (2010), at 151, *available at* https://download.nap.edu/catalog.php?record_id=12804.

[59] *See* Horowitz, et al., *supra* note 57, at 6.

[60] *Id.* at 14.

Conservation tillage and no-till practices, by leaving crop residue in place, reduce soil erosion. To the contrary, conventional tillage buries crop residue, making the soil vulnerable to soil erosion by both wind and rainfall. No-till cultivation methods reduce overall soil erosion by 93% compared to conventional tillage practices.[61] No-till and conservation tillage techniques reduce wind-caused topsoil erosion by between 70% and 90%.[62]

Reduced soil erosion has two primary benefits – improved soil structure and reduced pollution. Soil erosion threatens the productivity of soils by removing topsoil, the uppermost layer of soil, which contains high concentrations of nutrients and organic matter.[63] This well-structured layer of soil is the most hospitable to seeds and plant growth, but also the most vulnerable to soil erosion.

Adoption of no-till and conservation tillage practices also reduces water runoff by up to 69% compared to

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[61] R.S. Fawcett, et al., *The Impact of Conservation Tillage on Pesticide Runoff Into Surface Water: A Review and Analysis*, J. SOIL & WATER CONS., Vol. 49, Iss. 2, 126-135 (1994).

[62] D.J. Lyon and J.A. Smith, *Wind Erosion and Its Control*, NEBGUIDE, University of Nebraska Cooperative Extension Service, http://www.ianrpubs.unl.edu/pages/publicationD.jsp?publicationId=130 (2004).

[63] Overtillage was one of the causes of and/or contributed to the Dust Bowl of the 1930s. *See* B.I. Cook, et al., *Amplification Of The North American Dust Bowl Drought Through Human-Induced Land Degradation*, PNAS, Vol. 106, No. 13, 4997-5001 at 4997 (2009).

conventional tillage, decreasing soil, nutrient and pesticide runoff into nearby waterways.[64] Agricultural runoff contains sediment, pesticides, and excess nutrients, which easily binds to soil particles. Sediment pollution clouds water and reduces photosynthesis in waterways.[65] No-till and conservation tillage practices reduce phosphorus runoff by 81% and 70%, respectively, when compared to conventional tillage.[66] No-till cultivation also reduces herbicide runoff by 70%.[67]

The utilization of no-till and conservation tillage practices reduce greenhouse gases (GHG) emissions attributable to agriculture and can, in some instances, sequester atmospheric carbon. No-till and conservation tillage systems require less intensive equipment operations than conventional tillage, resulting in less fuel usage. For example, a farmer in a conventional tillage system uses an average of 5.32 gallons of diesel fuel per acre during a growing season. In contrast, no-till operators typically use an average of 2.33 gallons per acre, less than half of what a conventional tillage farmer uses. Between 1996 to 2010, conversion to no-

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[64] *See* Fawcett, *supra* at note 61.

[65] John D. Sutton, et al., *Water Quality and Agriculture: Status, Condition, and Trends*, USDA NRCS, Working Paper #16 at 2, *available at* http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_012448.pdf.

[66] B.J. Andraski, et al., *Phosphorus Losses in Runoff as Affected by Tillage*, SOIL SCI. SOC. AM. J., Vol. 49, No. 6, 1523-1527 at 1526 (1985).

[67] *See* Fawcett, *supra* at note 61.

till and conservation tillage on soybean farms resulted in 210 million fewer gallons of diesel fuel being consumed in the United States, the equivalent of removing the GHG emissions from 481,250 cars.[68]

Conservation tillage and no-till operations foster improved carbon sequestration. Soybeans and other plants sequester carbon dioxide during photosynthesis. No-till and conservation tillage techniques allow carbon to remain in the soil, whereas conventional tillage will release much of the carbon accumulated after plowing the subsequent crop. One study concluded that an Indiana soybean field using conventional tillage techniques stored 84 pounds of carbon per acre, far less than the 338 pounds of carbon per acre sequestered using conservation tillage and a fraction of the 446 pounds of carbon sequestered in an acre grown in no-till conditions.[69] If carbon sequestration savings are considered, soybean farmers have potentially removed the GHG emissions equivalent of 9.3 million cars from America's roads from 1996 to 2010.[70]

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[68] Graham Brookes & Peter Barfoot, *GM Crops: Global Socio-Economic and Environmental Impacts 1996-2010* at 144, PG Economics Ltd, UK, www.pgeconomics.co.uk/pdf/2012globalimpactstudyfinal.pdf (May 2012); US EPA Greenhouse Gas Equivalencies Calculator, http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results (last viewed Jan. 21, 2013).

[69] P.J. Smith, *Quantifying the Change in Greenhouse Gas Emissions Due to Natural Resource Conservation Practice Application in Indiana*, The Indiana Carbon Storage Project, at 39 (2002), *available at* http://www.in.nrcs.usda.gov/pdf%20files/Indiana_Final_Report.pdf.

[70] *See* Brookes & Barfoot, *supra* note 68, at 144.

Although the introduction of chemical herbicides during the second half of the 20th century has significantly displaced hand labor and tillage-intensive mechanical weed control, the use of chemical herbicides is accompanied by employee safety and environmental concerns. Fortunately, glyphosate-resistant technology facilitates reductions in the use of persistent and riskier herbicides.

Prior to the introduction of glyphosate-resistant varieties, farmers controlled weed growth by applying a variety of herbicides, each of which targeted a specific type of weed. The effectiveness of available herbicides caused a shift in weed population dynamics such that less-adequately controlled species became more pervasive until other herbicides or mechanical methods were introduced to control those weeds.[71] Some of these herbicides have lengthy persistence periods, remaining active in the soil for a longer period of time after application. These persistent herbicides can run off into waterways, potentially harming aquatic plants, fish and animals.

In contrast, glyphosate is a broad spectrum herbicide. While effective against over 100 species of weeds, glyphosate does not have many of the deleterious environmental effects associated with other

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[71] Dan Towery & Steve Werblow, *Facilitating Conservation Farming Practices and Enhancing Environmental Sustainability with Agricultural Biotechnology* at 18, Conservation Technology Information Center, at 18 (2010).

types of herbicides.[72] Glyphosate is described as "practically non-toxic by ingestion" and non-carcinogenic, making it safer for applicators.[73] The use of glyphosate permits farmers to avoid using herbicides which EPA estimates are 3.4 to 16.8 times more toxic to humans.[74] Glyphosate binds tightly with soil, which renders it unlikely to result in stormwater runoff or leach into groundwater. Additionally, glyphosate is "practically nontoxic to fish."[75]

The conversion of farmland from conventional tillage systems to conservation tillage or no-till practices has also improved water conservation amongst soybean farmers. These practices minimize the evaporation that traditionally results from conventional tillage and improve water infiltration in soils. Conservation tillage and no-till techniques improve soil quality by encouraging the development of a healthier soil structure, including increased organic

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[72] Monsanto Co., *History of Monsanto's Glyphosate Herbicides*, Backgrounder, http://www.monsanto.com/products/Documents/glyphosate-background-materials/back_history.pdf, (June 2005).

[73] Extension Toxicology Network, *Pesticide Information Profile: Glyphosate*, http://extoxnet.orst.edu/pips/glyphosa.htm (June 1996).

[74] J.M. Shutske, *The Impact of Biotechnology and Information Technology on Agricultural Worker Safety*, University of Minnesota Extension (Jan. 2010), *available at* http://nasdonline.org/document/1845/d001780/the-impact-of-biotechnology-and-information-technology-on.html.

[75] *See* Extension Toxicology Network, *supra* note 73.

matter, macropores, cracks, and earthworm burrows.[76] One study concluded that moisture loss over a growing season was reduced by the equivalent of 5.9 inches of rainfall in a no-till system compared to conventional tillage.[77]

H. The Planting of Commodity Grain is an Unorthodox Practice

Petitioner makes the inaccurate assertion that farmers follow a time-honored tradition of using undifferentiated grain elevator-sourced commodity soybeans for seed, which he terms "commodity seed."[78] To the contrary, grain elevators typically sell soybeans and other commodity crops to millers and others in large quantities for feed, export, and processing into food products. Elevators selling commodity soybeans cannot represent that they can be used for seed.[79] The soybeans purchased by Petitioner at issue in this case were not sold as seed under the Indiana Seed Law nor

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[76] J.C. Siemans, *Soil Management and Tillage Systems*, ILLINOIS AGRONOMY HANDBOOK 1999-2000 at 122, University of Illinois Extension, Circular 1360 (1998).

[77] *Id.*

[78] Pet. Br. at 6. "Commodity seed" is a term fashioned by Petitioner and not utilized in the soybean industry. While virtually all soybeans are capable of being planted, soybeans cannot be sold as seed without complying with federal and state law. *See also* CHS Br. __.

[79] *See e.g.* IND. CODE §§ 15-15-1-32, 15-15-1-40. The Indiana Seed Law is modeled after the Recommended Uniform State Seed Law.

"commonly recognized in Indiana as agricultural seeds."[80]

Seed dealers are governed by federal and state laws and regulations designed to protect farmers and prevent the spread of weeds, the soybean's natural enemy.[81] For example, in Indiana, a seed dealer is required to certify that agricultural seed contains no more than 2.5% weed seed, 0.25% restricted noxious weed seed, nor any prohibited noxious weed seed.[82] Seed sold by dealers must be accompanied by a label stating, *inter alia*, the estimated germination rate, the percentage of hard seed, the calendar month that the seed was tested, and a sell-by date.[83]

Before the advent of biotech soybeans, soybean farmers frequently obtained seeds from dealers or by saving seed beans from the prior year's crop. Dealers select seed varieties from sellers that are well-suited to a particular region's growing conditions, as well as their resistance to insects, weeds, disease, weather pressures, and maturity.[84] The seeds sold by dealers

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[80] IND. CODE § 15-15-1-2.

[81] *See, e.g.*, The Federal Seed Act, 7 U.S.C. §§ 1551 *et seq.*

[82] IND. CODE § 15-15-1-32. Noxious weeds are perennial weeds that not only produce seed but also spread by underground roots and stems. They are destructive and not easily controlled by ordinary tillage and herbicide applications.

[83] *Id.*

[84] In the context, "maturity" means the length of a growing season necessary before a crop may be harvested.

have also been cleaned, removing crop residue, foreign matter and weed seeds. The cost of soybeans sold as seed includes research and development expenditures, license fees, processing and transportation costs and is more expensive than commodity grain.[85]

Grain elevators rarely, if ever, sell commodity grain to farmers as seed.[86] The reasons underlying a lack of viable seed market for grain elevators are not complex. Farmers, like any rational buyer of inputs, require information concerning seeds they intend to plant. Grain elevators selling "commodity soybeans" cannot neither verify nor certify the germination rate, hard seed or weed content, or maturity of the soybeans they sell. As a result, neither do the very small number of farmers who purchase such soybeans for use as seed.[87] The practice of purchasing seeds from grain elevators for planting is fraught with risk. Widespread adoption of Mr. Bowman's license fee circumvention scheme will hinder productivity, facilitate the spread of noxious weeds, and place elevators in the untenable position of serving as *de facto* state inquisitors regarding the intended uses of grain purchased by their customers.[88]

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[85] CHS Br. ___.

[86] "Commodity grain" is the grain harvested from a farmer's field and sold to a grain elevator or other buyer for use as animal feed, biofuels, food processing, or export. Commodity grains from various farms are intermingled and undifferentiated.

[87] Pet. Br. 5.

[88] CHS Br. ___.

SUMMARY OF ARGUMENT

American farmers will sustain severe harm in the event this Court determines that Monsanto's intellectual property rights in second and subsequent generation soybean seeds are exhausted. The self-replicating[89] nature of soybeans does not somehow transform Bowman's right to use commodity soybeans -- as feed or for other proper purposes -- into the right to make *new articles* containing patented technology. Amici submit that the use of biotechnology permits farmers to produce crops more efficiently and sustainably than ever before. Current and future research is likely to result in higher yields, better nutritional content, and will enable farmers to use more environmentally sustainable production practices. The simplification of weed management when using glyphosate-resistant technology allows soybean farmers to adopt cultivation practices that improve carbon sequestration and reduce deleterious environmental impacts, including erosion, runoff and greenhouse gas emissions. Utility patent protection provides the

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[89] Petitoner's use of the term "self-replicating" oversimplifies the conditions necessary for a soybean seed to germinate into a plant and produce new soybeans. *See* Pet. Br. 15. Soybeans typically need soil temperatures in excess of 50 degrees before germination commences. Soybean seeds need to be planted in loose, well-drained soils at a depth of 1 to 2.5 inches, depending on the soil's moisture content. Meeting these requirements requires proper timing and the use of machinery. The notion that soybean plants would reproduce themselves into perpetuity without human intervention borders on the preposterous. *See* National Soybean Research Laboratory, *Soybean Production: Planting, Growing, and Harvesting Soybeans*, www.nsrl.uiuc.edu/abouysoy/production02.html (last viewed Jan. 21, 2013).

necessary incentive for seed and biotechnology companies to develop groundbreaking, innovative genetically modified crops.

This Court should affirm the decision of the Federal Circuit and clarify that the patent exhaustion doctrine is inapplicable to the unauthorized planting of second and subsequent generation seeds containing Monsanto's technology. Moreover, neither *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008) nor any other decision of this Court stands for the proposition that a sale of a seed (or any other patented article) bestows upon a purchaser the right to "construct an essentially new article," absent authorization. *Jazz Photo Corp. v. International Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001). Reversal of the decision below will be tantamount to the endorsement of Bowman's highly unusual fee circumvention scheme and will have severe negative implications for the soybean industry, in particular, and American agriculture generally. There is little dispute that farmers are dependent on genetic advancements in order to meet growing demand and to remain competitive in a global marketplace. A decision that results in a lack of intellectual property protection for seed biotechnology firms will, in all likelihood, result in the prompt diversion of research dollars currently devoted towards the improvement of soybeans and other self-pollinating seeds.

ARGUMENT

I. The Federal Circuit Correctly Held that the Patent Exhaustion Doctrine Was Inapplicable to Bowman's Creation of Subsequent Generations of Soybean Seeds

Petitioner Bowman has twice argued that Monsanto's rights in its patented seeds were exhausted based upon this Court's decision in *Quanta*. Bowman's arguments were properly rejected by the Southern District of Indiana, Pet. App. 41a. The court of appeals affirmed, concluding that "even if Monsanto's patent rights in the commodity seeds are exhausted, such a conclusion would be of no consequence because once a grower . . . plants the commodity seeds containing Monsanto's Roundup Ready technology and the next generation of seed develops, the grower has created a newly infringing article." Pet. App. 14a.

The Federal Circuit properly focused its analysis upon the cornerstone of patent exhaustion jurisprudence: *the article*.[90] Bowman's highly

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[90] In *United States v. Univis Lens Co.*, this Court explained that a "patentee may surrender his monopoly in whole by the sale of the patent or in part by the sale of *an article* embodying the invention. His monopoly remains so long as he retains the ownership of the patented article. But sale of it exhausts the monopoly *in that article*." 316 U.S. 241, 250 (1942)(emphasis added). Unlike the second and subsequent generation soybean seeds at issue at bar, *Univis Lens* concerned application of the patent exhaustion doctrine to a partially completed lens blank which was "capable of use only in practicing the patent." *Id.* at 249. The commodity soybeans planted by Petitioner were certainly capable of being used for feed, oil and applications other than planting.

unorthodox and uncommon practice of buying commodity soybeans did not bestow upon him the unrestricted right to replicate Monsanto's patented technology. While he was free to use the articles he purchased for feed or for any other *proper purpose,* Bowman did not possess a license or other "right to construct an essentially new article on the template of the original." *Jazz Photo,* 264 F.3d at 1102. Bowman's planting and cultivation of those commodity beans resulted in the creation of new soybeans, each of which constituted a "newly infringing article." Pet. App. 14a.

The Federal Circuit's decision is also consistent with *Quanta.* First, self-replicating technology was not at issue in *Quanta.* Second, Bowman's planting and growing of new seeds did not concern the re-use, repair, or re-sale of an article to which the patent exhaustion doctrine might apply. *See Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 342 (1961). To the contrary, Bowman's cultivation of a new crop of soybeans constituted infringement because he made *new articles* containing Monsanto's intellectual property.[91] Bowman's bundle of property rights in soybeans purchased from a grain elevator can be no greater than the bundle of rights possessed by the original soybean producer and the sale of a good to a third party does not vitiate a patentee's explicit restrictions on a licensee's use of its invention. *General Talking Pictures Corp. v. Western Electric Co.*, 304 U.S.

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[91] Monsanto did not sell any Roundup Ready® seeds unconditionally and therefore all soybeans containing its technology are similarly restricted.

175, 181 (1938). This Court should not permit the patent exhaustion doctrine to be used as a sword to sever a patentee's residual right to "exclude others from making . . . the invention throughout the United States . . . ." 35 U.S.C. §154(a)(1). Accordingly, this Court should affirm the Federal Circuit's decision and uphold Monsanto's right to exclude Petitioner from making new soybean seeds. Affirmance will maintain a legal environment that will permit seed breeders to devote the funds necessary to foster the research and development critical to agricultural innovation.

II. Soybean Farmers and Society Will Substantially Benefit From Advances in Plant Biotechnology

Amici respectfully submit that biotechnology is a critical tool that must be employed by farmers to feed a growing population while maximizing environmental sustainability. The public also benefits from this technology, which has applied innovation and ingenuity to the task of feeding a growing world.[92]

The introduction of glyphosate-resistant technology has revolutionized how farmers manage weeds. As a result, soil quality has improved because of reduced erosion and the re-generation of topsoil. Soil water loss has decreased, allowing farmers to produce more grain with less rainfall and irrigation. Runoff of sediments and pesticides has decreased substantially.

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[92] Haley Stein, *Intellectual Property and Genetically Modified Seeds: The United States, Trade, and the Developing World*, 3 NW. J. TECH & INTELL. PROP. 160, 161 (2005).

Conservation tillage and no-till practices reduce GHG emissions, sequester carbon, and improve agriculture's carbon footprint. Furthermore, use of glyphosate-resistant technology improves farmers' quality of life by making crops more manageable and reducing hand labor and exposure to more persistent and harmful pesticides.

The potential benefits of biotechnology are largely untapped. While glyphosate-resistant technology is one of the first genetically modified traits available to farmers, it will not be the last. Genetic researchers, bolstered by intellectual property protection, are developing cutting-edge traits that will make American farmers more productive while requiring the use of less fertilizer, water, and persistent pesticides. These new innovations will also produce fewer deleterious environmental consequences and assist in maximizing the efficient use of scarce resources to feed a rapidly expanding global population.

Biotechnology will also play a role in improving the productivity and nutritional content of crops in developing nations.[93] For example, disease resistant cassava plants have the potential to improve the yield of an important tropical food crop while reducing the use of riskier hand-applied pesticides. Genetically

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[93] Bill & Melinda Gates Foundation, *Why the Foundation Funds Research in Crop Biotechnology*, http://www.gatesfoundation.org/agriculturaldevelopment/Pages/why-we-fund-research-in-crop-biotechnology.aspx (last viewed Jan. 21, 2013).

modified "golden" rice promises to reduce nutritional deficiencies in countries dependent on rice as a staple.[94]

Amici strongly urge this Court to affirm the Federal Circuit's decision in light of the critically important negative consequences that would be triggered by reversal. If seed developers lack intellectual property protection, some farmers may adopt Petitioner's unorthodox scheme of license fee circumvention. In order to remain competitive with those who elect to mimic Petitioner's scheme, many farmers will need to gamble on a "grab bag" of grain not sold as seed. Research dollars are then likely to be diverted from developing better varieties of self-pollinating crops -- including soybeans and wheat -- because it will become difficult, if not impossible, to recoup research expenses.[95] Seed companies, like other publicly traded research entities, are duty-bound to their shareholders and are required to make economically rational decisions. The loss of intellectual property protection for second and subsequent soybean generations containing patented traits will undoubtedly result in a substantial reduction in crop research. Any stagnation in innovation will have negative impacts on America's farmers and consumers of food and other agricultural products.

In 1836, the State Department instituted the free seed distribution program to obtain the best seed technology for America's farmers in order to produce

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[94] *Id.*

[95] *See* American Seed Trade Association Br. __.

food for the nation. The free seed program was terminated because seed technology was not keeping pace with society's demands. During 2012, the State Department re-affirmed its support of agricultural biotechnology as a way to produce the food needed by a growing world population.[96] In order to meet this challenge, "more food will need to be produced in the next 50 years than has been produced during the last 10,000 years combined."[97] Agricultural biotechnology is a "proven means of building global food stores."[98] Little incentive exists for innovation unless seed research and development is afforded intellectual property protection. Soybean, corn, wheat and sugar beet farmers can help achieve these goals, but will require access to continued improvements in seed technology.

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[96] Jose W. Fernandez, Assistant Secretary, U.S. Dept. of State, Remarks: Boosting Agricultural Production (Mar. 16, 2012), *available at* http://www.state.gov/e/eb/rls/rm/2012/182459.htm?go Mobile=0.

[97] *Id.*

[98] *Id.*

CONCLUSION

For the reasons stated herein, the judgment of the United States Court of Appeals for the Federal Circuit should be affirmed.

Respectfully submitted,

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AMICUS CURIAE BRIEF

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RECORD AND BRIEFS

IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, *et al.*,

Respondents.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF *AMICI CURIAE* OF AUTOMOTIVE AFTERMARKET INDUSTRY ASSOCIATION, AUTOMOTIVE PARTS REMANUFACTURERS ASSOCIATION, AND INTERNATIONAL IMAGING TECHNOLOGY COUNCIL IN SUPPORT OF THE PETITIONER

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STATEMENT OF INTEREST[1]

Amici are not-for-profit associations of companies that compete against original equipment manufacturers ("OEMs") for sale of replacement parts and consumable goods and provision of repair services.

Automotive Aftermarket Industry Association ("AAIA") is a national trade organization that represents more than 23,000 companies that manufacture, distribute, and sell motor vehicle parts, accessories, services, tools, equipment, materials, and supplies for passenger cars, heavy duty vehicles such as trucks, buses, off-road vehicles, and marine, industrial, and construction equipment. AAIA represents more than 100,000 repair shops, parts stores and distribution outlets. While AAIA's members include companies that sell to OEM vehicle manufacturers, AAIA's primary focus is the independent aftermarket which employs four million people and contributes more than two percent of the U.S. gross domestic product ("GDP"). Following the expiration of the new car warranty, over 75 percent of car owners patronize independent repair shops rather than new car dealers.

Automotive Parts Remanufacturers Association ("APRA") is the trade association for companies that collect used motor vehicle parts and restore them to functionality through a process known as "rebuilding"

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1. The parties have consented to the filing of this brief. No counsel for a party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than *amici curiae*, their members, or their counsel made a monetary contribution to its preparation or submission.

or "remanufacturing," thus extending the life of the product. Currently, APRA represents over nine hundred companies that remanufacture motor vehicle parts and their suppliers. Parts remanufactured by APRA members are used in automobiles, trucks, buses, and off-highway vehicles such as construction and industrial equipment and farm machinery.

International Imaging Technology Council ("I-ITC") represents the interests of the imaging supplies industry, including companies that buy used cartridges, remanufacture used toner and inkjet cartridges, retail remanufactured cartridges, and all related industry suppliers.

The amici submit this brief in support of petitioner to address the first Question Presented: Whether the Federal Circuit in *Monsanto Co. v. Bowman*, 657 F.3d 1341 (Fed. Cir. 2011) ("*Bowman*") erred by refusing to find patent exhaustion in patented seeds even after an authorized sale?

Products such as automobiles and computer printers contain removable and consumable parts that can be repaired or refurbished many times. By procuring parts and repair services, consumers extend the useful life of these products and enhance the value of their initial investments. Members of the amici satisfy this consumer demand by providing alternative sources of consumable goods, replacement parts, and services at lower cost and of as good or better quality than the OEM. These companies' replacement products often include enhanced features compatible with, but not available on, the original equipment. Aftermarket competition from these companies thus constrains OEMs from increasing prices

to supracompetitive levels, and spurs higher quality and innovation in new and aftermarket products.

These companies contribute substantially to the American economy.[2] The motor vehicle aftermarket industry, encompassing products and services purchased for light, medium and heavy duty vehicles after the original sale including replacement parts, accessories, lubricants, appearance products, tires, collision repairs as well as the tools and equipment necessary to make the repair, employed approximately 3.8 million people in 2010. Overall aftermarket sales totaled $285.7 billion in 2010, including sales in the automotive aftermarket (cars and light trucks) of $215.4 billion and sales in the medium and heavy duty vehicle aftermarket of $70.3 billion. Amici believe more than 10,000 companies in the United States rebuild motor vehicle parts.

According to the U.S. Census Bureau, in 2010 consumers spent more than $19 billion for repair and maintenance of electronic and precision equipment, of which more than $7 billion was spent for computer and office machine repair and maintenance.[3] Approximately

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2. *See Eastman Kodak Co. v. Image Technical Servs. Co.*, 504 U.S. 451, 462 & n.6 (1992). *See also, Aro Mf'g Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 357-358 (1961) (*"Aro I"*) (Justice Black, concurring).

3. U.S. Census Bureau, Estimated Revenues, 2010 Annual Services Report, *Sources of Revenue, and Expenses for Employer Firms*, Table 10.1. Other Services (Except Public Administration, Religious, Labor, and Political Organizations, and Private Households) (NAICS 81) – Estimated Revenue for Employer Firms: 2002 Through 2010, *available at* http://www.census.gov/services/sas/data_summary81.html (last visited Dec. 3, 2012).

2,000 domestic businesses recondition and repair office imaging supplies, employing approximately 70,000 workers. Industry observers estimate that aftermarket refurbished printer supplies in North America comprise approximately 25-30 percent of the market for monochrome laser printer toner cartridges, up to 10 percent of the market for color laser printer toner cartridges, and approximately 14 percent of the aftermarket for refilled ink jet cartridges, with total annual aftermarket sales of some $3.4 billion.

Reuse and repair also promote sound environmental policies, and conserve resources such as precious metals and petroleum-based plastics. Rebuilding automotive parts typically re-uses 88 percent of the raw material from the original parts, and rebuilding engines consumes 50 percent of the energy required to produce a new engine. I-ITC estimates reconditioning ink and toner cartridges will keep some 84,000 tons of industrial-grade plastics and metals out of landfills this year. Acquisition guidelines of federal agencies, state and municipal governments, and corporations express preferences for purchase of refurbished and recycled products such as those produced by members of the amici.[4]

Companies represented by amici run the gamut from large, technologically-sophisticated entities with substantial intellectual property portfolios to small operators that service local customers. What unites

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4. *See* 40 C.F.R. § 247.11 (2012); U.S. Environmental Protection Agency, *Comprehensive Procurement Guidelines – Toner Cartridges, available at* http://www.epa.gov/osw/conserve/tools/cpg/ products/toner.htm (last visited Dec. 3, 2012).

these companies in this case is their stake in access to original equipment free of downstream patent restraints on alienation or repair asserted by the manufacturer as post-sale conditions on the purchase of patented goods. Without access to OEM products to repair or refurbish, these companies cannot provide choices to consumers or competition to OEMs based on price, quality, and features. The amici respectfully submit this brief so the Court may consider the impact, on commerce generally and on these aftermarket industries in particular, of the Federal Circuit's narrowing of the exhaustion rule.

Even after this Court's recent reaffirmation of the patent exhaustion doctrine in *Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617 (2008), the Federal Circuit has sent conflicting signals suggesting that *Quanta* left standing the erroneous theory that post-sale use restrictions imposed by a "conditional sale" can trump patent exhaustion. OEMs have continued to exploit this confusion by applying restrictive patent notices to products and packaging sold to consumers in an attempt to exercise downstream post-sale control over the uses of these products by consumers. Though ostensibly positioned as a contract with the purchaser, OEMs deploy these post-sale restrictions as a strategem to lock out aftermarket competition for products and services that otherwise would constitute permissible repair under the patent laws.

The perspectives and experience of the amici thus place in sharp relief the harmful consequences of the erroneous decisions of the Federal Circuit. If post-sale conditions can prevent exhaustion, both consumers and aftermarket competitors risk liability for patent

infringement if the article is repaired by anyone other than the patentee. Patent law and competition best will be served by a bright-line holding, consistent with Court precedents, that rejects the Federal Circuit's "conditional sales" theory, and reaffirms that an authorized sale exhausts the patent owner's interest in the vended article. Any additional purported post-sale restrictions on the use or disposition of that article cannot be enforced by patent law, and only may be imposed to the extent consistent with contract and antitrust law.

SUMMARY OF ARGUMENT

Under long-standing precedents of this Court, an authorized sale of a patented article exhausts the patentee's right to restrict otherwise permissible uses of that article. Any attempt to further restrain the post-sale rights of the purchaser may be adjudged under contract and commercial law, but no longer is subject to the patentee's rights or a patent-based remedy. This articulation of the exhaustion rule properly balances the patent owner's exclusive rights with the consumer's right to reuse, resell, repair, and improve lawfully-acquired property, and the public interest to prevent unfair competition.

Decisions of the Federal Circuit continue to muddle these clear principles, and threaten to upend this balance, to the detriment of competition and the public interest. In a line of cases beginning with *Mallinckrodt*[5] and continuing through *Bowman*, the Federal Circuit asserts that post-sale restrictions revive exhausted patent rights, and deems

5. *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700 (Fed. Cir. 1992).

purchasers of patented goods and third party aftermarket competitors liable for patent infringement from otherwise-lawful combinations and repair. In *Quanta*, this Court reversed the Federal Circuit's attempts to improperly extend patent rights beyond the authorized sale of the patented article. This Court likewise should reject the Federal Circuit's attempt to re-draw that line in *Bowman*.

These Federal Circuit decisions also encroach upon precedents of this Court defining lawful repair. Repair and customization industries provide valuable service to consumers and contribute billions of dollars to our economy. The post-sale restrictions in *Bowman* and its progenitors would prevent commonplace activities such as repair and upgrading of elements of a personal computer, an automobile, or any patented combination—much as the post-sale restrictions in *Mallinckrodt* imposed patent infringement liability on competitors otherwise engaged in lawful repair. Consumers and aftermarket competitors targeted by such post-sale restrictions may not know whether the restriction exists or, even if embossed on the device itself, whether the restriction is valid or enforceable. Yet, under *Bowman*, these consumers and aftermarket competitors could be sued and potentially held liable for patent infringement. These are not mere abstract concerns. Recent cases (in addition to *Bowman*) demonstrate how patent owners continue their attempts to impose restrictive post-sale requirements, with different outcomes depending upon whether the courts follow the Federal Circuit precedent or *Quanta*.

The threat of potentially devastating patent infringement liability chills competition by aftermarket businesses. Patent suits involve technically complex issues of infringement, claim construction, and validity, and

are extremely expensive to defend. Enhanced damages, attorney fees, and preliminary and permanent injunctive relief pose intolerable risks for small entrepreneurial companies. By contrast, suits based on contract, as should be the norm under the Court's exhaustion rule, are far less expensive to defend and less likely to jeopardize a company's long-term survival. Reaffirmation of this Court's exhaustion rule will protect the public's right to repair and stimulate investment in aftermarket industries.

Reaffirming the scope of patent exhaustion also will restore the proper balance between patent rights and antitrust law. Post-sale patent conditions and infringement lawsuits typically target manufacturers and sellers of competing supplies and repair services, not the purchasers that purportedly agreed to the post-sale restrictions. By allowing post-sale patent restrictions to limit exhaustion, the Federal Circuit necessarily proscribes lawful aftermarket competition and limits antitrust defenses – thereby restricting consumer choice, increasing consumer prices, and stifling aftermarket innovation.

Finally, a clear rule finding exhaustion upon an authorized sale best serves modern commerce. Products such as cars and computers may be sold and resold many times during their useful life. Millions of businesses and consumers use online commerce to resell anything from small used parts to a fleet of cars. Sellers and purchasers are entitled to know they have the right to resell, purchase, and use what they buy, free from the threat of infringement suits.

ARGUMENT

I. THE EXHAUSTION DOCTRINE RECENTLY REAFFIRMED BY THIS COURT IN *QUANTA* MUST BE PRESERVED, NOT NARROWED AS THE FEDERAL CIRCUIT HAS DONE IN *BOWMAN*.

Patent law vests the patentee with a limited monopoly interest, the full extent of which is an exclusive right to make, use, and sell the invention or discovery or to authorize others to do so. *United States v. Univis Lens Co.*, 316 U.S. 241, 250 (1942). As a statutory exception to policies disfavoring monopolies, the patent right imposes some sacrifice upon social welfare in return for the contributions of patent owners to the progress of science and the useful arts. The degree of sacrifice required of the public is proportionate to the scope of the patent right. Any aggrandizement of the patent right necessarily encroaches on other fundamental public interests.

Long-established doctrines of patent and competition law reflect the inherent tensions between the right of the patent owner to reap rewards for its invention and the right of the public to engage in commerce around the patented invention and in the patented article itself. An application of long-standing principles against equitable servitudes on property rights,[6] the exhaustion doctrine performs a key role in leveling this balance. By setting clear limits on the right of a patent owner to control

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6. *See, e.g., Straus v. Victor Talking Mach. Co.*, 243 U.S. 490, 500-501 (1917); 2 Coke, *Institutes of the Laws of England* § 360 (Day ed. 1812).

downstream commerce in vended patented articles, the exhaustion doctrine shapes the contours of the public's right to resell, reuse, recycle, and repair the patented article.

The exhaustion doctrine articulated by this Court in *Quanta* struck the proper balance among those interests. The patentee obtains its reward through the initial authorized sale, but the sale or passage of title to a patented article exhausts the patentee's interest in that article under patent law. "The longstanding doctrine of patent exhaustion provides that the initial authorized sale of a patented item terminates all patent rights to that item."[7] Exhaustion extends to any patent covering reasonable uses of the patented article.[8] If a patent owner seeks to impose any post-sale restriction on use or resale of the article, the validity and enforceability of that restriction is to be determined by state contract law – not patent law.[9]

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7. *Quanta*, 553 U.S. at 625. *See also id.* at 638 ("The authorized sale of an article that substantially embodies a patent exhausts the patent holder's rights and prevents the patent holder from invoking patent law to control postsale use of the article."); *Univis Lens Co.*, 316 U.S. at 250 ("[The patent owner's] monopoly remains so long as he retains the ownership of the patented article. But sale of it exhausts the monopoly in that article and the patentee may not thereafter, by virtue of his patent, control the use or disposition of the article").

8. *See, e.g., Univis Lens*, 316 U.S. at 250-251 (sale of the lens blank transfers ownership of the article and licenses the right to use the patent to produce the finished article).

9. "The extent to which the use of the patented machine may validly be restricted to specific supplies or otherwise by special contract between the owner of a patent and the purchaser or

Whether a post-sale restriction is subject to patent or contract law makes a vital difference to commerce. Patent infringement suits are complex and extremely expensive. Virtually any patent case requires specialized technical and legal analysis and expert testimony regarding claim construction, patent validity, and infringement. Small entrepreneurial companies, like those represented by *amici*, facing possible patent litigation must weigh the risks of enhanced damages, attorney fees, and injunctive relief. A preliminary injunction may force them near bankruptcy by starving them of ongoing revenue needed to support the business. Almost any patent suit by their definition is "bet the company" litigation. By contrast, breach of contract or tort litigation is far less expensive to defend, and even an adverse outcome is less likely to jeopardize their long-term survival.

Over the last 20 years, the Federal Circuit departed sharply from the Court's clear exhaustion principles. From *Mallinckrodt* through *Bowman*, the Federal Circuit granted patent owners new powers to assert infringement

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licensee is a question outside the patent law ...." *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 509 (1917), citing *Keeler v. Standard Folding-Bed Co.*, 157 U.S. 659, 666 (1895) ("[O]ne who buys patented articles of manufacture from one authorized to sell them becomes possessed of an absolute property in such articles, unrestricted in time or place. Whether a patentee may protect himself and his assignees by special contracts brought home to the purchasers is not a question before us, and upon which we express no opinion. It is, however, obvious that such a question would arise as a question of contract, and not as one under the inherent meaning and effect of the patent laws."). *Accord Quanta*, 553 U.S. at 637 n.7 ("the authorized nature of the sale to Quanta does not necessarily limit LGE's other contract rights").

for breach of post-sale restrictions. While agreeing that validity of a post-sale restriction is to be adjudged by contract law, the Federal Circuit nevertheless revived the patent owner's ability to assert infringement not only against the purchaser but, significantly, also against persons not party to that restrictive contract.[10]

Even after *Quanta*'s clear articulation of the *authorized* sale as a bright line for exhaustion, the Federal Circuit has done its utmost to cling to its "conditional sales" theory. In *Princo Corp. v. U.S. Int'l Trade Comm'n*, the Federal Circuit strayed far beyond the metes and bounds of the patent misuse issues before it to restate, in pure dictum, its conditional sales rationale rejected in *Quanta*.[11] And, in *Bowman*, in explaining its holding in prior seed cases decided before *Quanta*, the Federal Circuit reverted to a rationale—not discussed or credited in *Quanta*—that the application of the exhaustion doctrine depends upon whether the patent owner believes it has received "full value" for its rights.[12]

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10. For example, the defendant in *Bowman* purchased seeds from a third party grain seller that was not bound by any contractual obligation to Monsanto; and in *Mallinckrodt* the defendant was an aftermarket competitor that reconditioned the inhalers, not the hospital/purchaser alleged to be bound by a post-sale notice.

11. *Princo*, 616 F.3d 1318, 1328 (Fed. Cir. 2010) (en banc), citing *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419 (Fed. Cir. 1997), and *Mallinckrodt*.

12. *Bowman*, 657 F.3d at 1347, quoting *Monsanto Co. v. McFarling*, 302 F.3d 1291, 1299 (Fed. Cir. 2002) ("The price paid by the purchaser 'reflects only the value of the "use" rights conferred by the patentee.'" (citing *B. Braun Med.*, 124 F.3d at 1426). *See also*

As a consequence of these decisions, the Federal Circuit limited the circumstances in which antitrust law can remedy any anticompetitive effects of post-sale restrictions on commercial activities, such as recycling, customization and repair, that otherwise would be permissible under patent law.

This expansion of patent rights cannot be squared with the precedents of this Court. The Federal Circuit has upset the policy balance established by this Court, tipping the scales decidedly toward the patent owner and away from the public interest. Amici thus urge this Court to recalibrate the law in accordance with its established precedents defining the scope of exhaustion, permissible repair, and unfair competition.

Cardiac Pacemarkers, Inc. v. St. Jude Med., Inc., 576 F.3d 1348, 1362-1363 (Fed. Cir. 2009) (asserting that exhaustion "considers whether a patent owner has been fully compensated when a sale or license of his invention has occurred...."). Despite *Quanta*, the Federal Circuit's stubborn "conditional sales" rhetoric continues to mislead district courts' interpretations of the patent exhaustion doctrine. *See, e.g., PSN Illinois, LLC v. Abbott Labs and Abbott Bioresearch Ctr., Inc.*, No. 09cv5879, 2011 WL 444 2825, at *6 (N.D. Ill. Sept. 20, 2011) (asserting erroneously that, under *Quanta*, patent exhaustion applies "after the patentee has authorized that article's unconditional sale by another," in reliance upon *Princo*, *B. Braun Med.*, and *Mallinckrodt*).

II. PROPER INTERPRETATION OF THE EXHAUSTION DOCTRINE MAINTAINS SUPREME COURT PRECEDENTS CONCERNING REPAIR AND RECONSTRUCTION.

The doctrine establishing that repair of patented articles does not infringe the patent right is nearly as old as the American industrial revolution. "Since *Wilson v. Simpson* [in 1850], it has been the established law that a patentee had not 'a more equitable right to force the disuse of the machine entirely, on account of the inoperativeness of a part of it, than the purchaser has to repair, who has, in the whole of it, a right of use.'"[13] Permissible repair has been found across the breadth of commerce, including automobiles,[14] surfboards,[15] medical devices,[16]

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13. *Heyer v. Duplicator Mfg. Co.*, 263 U.S. 100, 101 (1923) (purchaser of duplicating machine had the right to replace consumable gelatine bands, and did not have to purchase them from the patent owner), citing *Wilson v. Simpson*, 50 U.S. 109, 123 (1850) (owner of a patented planing machine could replace worn-out cutting blades, even though the blades were fundamental to the invention).

14. *See Aro I* (replacement fabric convertible tops); *Dana Corp. v. Am. Precision Co.*, 827 F.2d 755 (Fed. Cir. 1987) (rebuilding automobile clutches using new parts and used parts from many disassembled worn clutches held permissible repair).

15. *Surfco Hawaii v. Fin Control Sys. Pty. Ltd.*, 264 F.3d 1062 (Fed. Cir. 2001), *cert. denied sub nom. Fin Control Sys. Pty. Ltd. v. Surfco Hawaii*, 536 U.S. 939 (June 24, 2002) (replacing fins constituted permissible repair).

16. *Kendall Co. v. Progressive Med. Tech.*, 85 F.3d 1570, 1576 (Fed. Cir. 1996) (right to repair included replacement of unspent parts for purposes of hygiene).

injection molding machines,[17] cooking devices,[18] disposable cameras,[19] and computer printers.[20]

In *Aro I*, this Court adopted a test to distinguish permissible repair from infringing reconstruction. The Court clarified that "mere replacement of [broken or worn-out] parts, whether of the same part repeatedly or of different parts successively, is no more than the lawful right of the owner to repair his property"; and such replacement constitutes lawful repair regardless of how "essential [each nonpatented part] may be to the patented combination and no matter how costly or difficult replacement may be." *Aro I*, 365 U.S. at 345-346. This distinction protected the patent owner against those who re-make the invention anew,[21] while promoting the

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17. *Husky Injection Molding Sys. v. R&D Tool & Eng'g*, 291 F.3d 780 (Fed. Cir. 2002).

18. *Bottom Line Mgt., Inc. v. Pan Man, Inc.*, 228 F.3d 1352, 1355 (Fed. Cir. 2000) (resurfacing cooking plates was permissible repair).

19. *Jazz Photo Corp. v. Int'l Trade Comm'n*, 264 F.3d 1094 (Fed. Cir. 2001) (approving eight-step repair process).

20. *Hewlett-Packard Co. v. Repeat-O-Type Stencil Mfg. Corp.*, 123 F.3d 1445 (Fed. Cir. 1997), *cert. denied*, 523 U.S. 1022 (1998) (permissible repair to modify ink jet cartridge for resale).

21. *See Wilbur-Ellis Co. v. Kuther*, 377 U.S. 422, 424 (1964) ("The idea of 'reconstruction' in this context has the special connotation of those acts which would impinge on the patentee's right 'to exclude others from making,' 35 U.S.C. 154, the article."). In *Wilbur-Ellis*, the Court held that resizing unpatented parts in a patented combination was repair, not reconstruction, even though the activity customized the patented article by replacing unworn parts.

paramount public interest in lawful commerce pertaining to patented goods.

A. The Federal Circuit's Narrow View of the Patent Exhaustion Doctrine Thwarts the Public's Right to Repair.

Thousands of businesses provide customization and repair services and supply replacement parts for automobiles and electronics products. Automotive parts businesses commonly repair and recondition hundreds of reusable parts such as transmissions, alternators, brakes, clutches, and controlled velocity joints. Car engines commonly are customized and upgraded by third party repair shops using aftermarket parts. Suppliers in the imaging industry repair toner and ink cartridges for business and home office use with both mechanical parts and complex electronic chips that regulate and upgrade printing operations. Consumers upgrade computers with additional storage and memory, graphics processing and gaming boards. Consumers benefit from competition for service, repair and replacement of parts through lower prices, higher quality, and competitive features.

As Justice Black observed in his concurrence in *Aro I*, small repair and service businesses such as those represented by *amici* provide vital services to the domestic economy, but need bright-line rules to avoid the "disastrous or even lethal consequences" of patent infringement suits:

> [B]usinessmen are certainly entitled to know when they are committing an infringement.... But to what avail these congressional precautions if this Court, by its opinions, would

> subject small businessmen to the devastating uncertainties of nebulous and permissive standards of infringement under which courts could impose treble damages upon them....[22]

The right to repair depends upon proper application of the Court's precedents on patent exhaustion, because the repair right attaches where the product is subject to exhaustion. Any curtailment of the scope of patent exhaustion necessarily constricts the repair right, and substantially expands a patent owner's power to preclude otherwise lawful commerce in the repair of patented articles and the sale of unpatented components.

While some Federal Circuit decisions hew closely to the Court's definition of permissible repair,[23] decisions like *Mallinckrodt* eviscerate it. *Mallinckrodt* involved a single use restriction on a medical inhaler sold to hospitals. The patent owner received payment for the patented article and the hospitals took title to the device. Although title passed to the hospital, the patentee marked the inhalers with the words, "single use only," *i.e.*, a post-sale notice. The hospitals provided used devices to Medipart, which sterilized and repackaged them for a second use. The district court found this reconditioning activity to be permissible repair that directly infringed no Mallinckrodt patent. Nevertheless, the Federal Circuit decreed the patent owner entitled to judgment as a matter of law against the repair defense if the post-sale single use restriction were sustained on remand.[24]

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22. *Aro I*, 365 U.S. at 358-359.

23. *See* cases cited *supra* at 14-15 nn. 14-20.

24. *Mallinckrodt*, 976 F.2d at 709. The Federal Circuit remanded the case for consideration of whether the three-word

By giving post-sale restrictions primacy over patent exhaustion, the Federal Circuit has redrawn the boundary between the rights of the public and the patentee's competitors to repair patented articles and replace unpatented components, and the right of patent owners to exclude infringing reconstruction. *Mallinckrodt* and its progeny have reclaimed the right to repair from the public, and given patent owners a right to file patent infringement suits against aftermarket service and repair organizations for otherwise permissible repair. The Federal Circuit thus improperly has extended patent protection beyond the authorized sale of patented articles.

B. The Federal Circuit's "Conditional Sales" Cases Create Continued Uncertainty Among the Courts and the Marketplace, a Trend that Only This Court Can Reverse.

Predictably,[25] the sea change in *Mallinckrodt* spawned more intrusive efforts by patent owners to stymie aftermarket competition for repair. *Quanta* should have

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notice created a valid post-sale patent license condition under state law, and if the restriction against reuse was within the patent right or otherwise justified. If so, the Federal Circuit held, the defendant could be liable for patent infringement, even for otherwise lawful repair. The case appears to have been resolved by settlement without any further legal or factual development.

25. *See Dawson Chemical Co. v. Rohm & Haas Co.*, 448 U.S. 176, 190 (1980), describing the rapid adoption of conditional licensing, and the ensuing corrosive effects on commerce, in response to *Henry v. A.B. Dick Co.*, 224 U.S. 1 (1912) – a result promptly reversed by the Court in *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. at 515.

laid all those concerns to rest.[26] But the Federal Circuit's continuing references to *Mallinckrodt* have continued to embolden plaintiffs to impose additional, creative patent-based intrusions upon their product marketing, to the detriment of consumers and competition.

In cases such as *Mallinckrodt* and *Bowman* in which post-sale restrictions target aftermarket competitors, narrowing the exhaustion and permissible repair doctrines exacts particularly severe penalties on commerce. While repair and supplies businesses can rely on patent marking and published patents to evaluate whether their activities constitute repair and not reconstruction, they have no analogous public information to determine whether devices are subject to post-sale restrictions. Businesses that later upgrade or repair products (such as the computers at issue in *Quanta*) may be unaware of a purported downstream restriction. Aftermarket competitors likely never will see the outer container of the original vended item, and have no information to determine whether the outer container

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26. *See Static Control Components, Inc. v. Lexmark Int'l, Inc.*, 615 F. Supp. 2d 575, 585-586 (E.D. Ky. 2009) ("*Quanta* overruled *Mallinckrodt sub silentio*. The Supreme Court's broad statement of the law of patent exhaustion simply cannot be squared with the position that the *Quanta* holding is limited to its specific facts. Further, the Federal Circuit relied in part on *Mallinckrodt* in reaching its decision in ... the decision the Supreme Court reversed in *Quanta*"); Herbert Hovenkamp, *Post-Sale Restraints and Competitive Harm: The First Sale Doctrine in Perspective*, 66 N.Y.U. Ann. Surv. Am. L. 487, 490 n.18 (2011) (noting that *Mallinckrodt*, the basis of the "conditional sales" theory, "was subsequently overruled in *Quanta*"); Thomas G. Hungar, *Observations Regarding the Supreme Court's Decision in Quanta*, ("Mallinckrodt's 'conditional sale' rationale is no longer good law.") 49 IDEA – Intell. Prop. L. Rev. 517, 533 (2009).

was slapped with a post-sale restriction or whether such a restriction legally could prevent repair. Many of these service companies receive empty consumable articles through intermediaries, such as commercial brokers and "cash for trash" charitable drives, without any of the original packaging. For example, charities that collect ink and toner cartridges sell them to brokers who place the cartridges on pallets wrapped in plastic, with no original packaging.

Even if the articles themselves are marked with a restrictive legend, the mere existence of such a "notice" does not make it *per se* valid or enforceable at law – a fact demonstrated by other, post-*Mallinckrodt*, Federal Circuit cases in which nearly identical "single use only" product markings were held *not* to create a restrictive patent license.[27] Thus, regardless of whether consumers and aftermarket competitors actually see the purported post-sale notice, they cannot know what rights they have to repair devices they lawfully own. Yet, under the Federal Circuit decisions, these businesses and consumers potentially would be subject to suit for patent infringement.

The history of *Static Control Components, Inc. v. Lexmark Int'l, Inc.* provides an object lesson on the continued pernicious effect of *Mallinckrodt*:

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27. *See, e.g., Kendall Co. v. Progressive Med. Tech. Inc.*, 85 F.3d at 1575, finding permissible repair by replacing with aftermarket parts a pressure sleeve sold in packaging marked "for single patient use only"; *Sage Prods. Inc. v. Devon Indus. Inc.*, 45 F.3d 1575, 1578 (Fed. Cir. 1995), finding repair by aftermarket replacement of used, but not spent, containers marked "single use only."

- a company used post-sale restrictions modeled on *Mallinckrodt* to openly target lawful competition, not to achieve compensation for patent rights;

- a court that initially upheld the restrictions under *Mallinckrodt*, reversed its opinion after *Quanta*, and held the restrictions unenforceable under patent law; but,

- the lingering uncertainty created by the Federal Circuit even after *Quanta* emboldens patent owners to expand their efforts to control post-sale uses under patent law.

The facts: Lexmark, a computer printer manufacturer, affixed a label on the toner cartridge box with a purported post-sale patent restriction. According to Lexmark, the label required the purchaser either to return the used cartridge only to Lexmark for remanufacturing and recycling or to throw the cartridge away. The restriction prohibited the purchaser only from giving the empty cartridge to third parties. Thus, the restriction was aimed explicitly at stifling competition from aftermarket companies (known as "rechargers") that recondition and refill toner cartridges.[28] Lexmark sued Static Control, which supplied nonpatented toner and parts used by rechargers to repair empty cartridges, and, later, several rechargers as well. On summary judgment, the court

28. Lexmark sold unrestricted cartridges at a higher price. But, a purchaser could throw away the empty restricted cartridge without breaching the post-sale condition. Therefore, any price differential reflected the commercial value to Lexmark of keeping empties from its competitors, not compensation for any patent rights in the article itself.

found the cartridge rechargers would have engaged in permissible repair of the cartridge empties but for the label on the box with the post-sale restriction which the court, citing *Mallinckrodt*, held to preclude exhaustion from sale of the cartridge.[29]

While the district court had pending under consideration the parties' post-trial motions,[30] this Court issued its opinion in *Quanta*. Following briefing and oral argument, the district court reversed its prior holding. After a lengthy review of the law governing patent exhaustion, and this Court's opinion in *Quanta*, the district court held that Lexmark's authorized cartridge sales exhausted its patent rights, and that its post-sale restriction could not be enforceable under patent law.[31] Recognizing that *Quanta* rejected the theories underlying the Federal Circuit's line of "conditional sale" cases beginning with *Mallinckrodt*, the district court concluded: "*Quanta* overruled *Mallinckrodt sub silentio*." 615 F. Supp. 2d at 585.

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29. *Static Control Components v. Lexmark, Int'l, Inc.*, 487 F. Supp. 2d 830 (E.D. Ky. 2007). The Ninth Circuit in a different case upheld the Lexmark label as a valid contract in the context of California unfair competition and false advertising law. The appellant in that case neither challenged the validity of the *Mallinckrodt* decision nor contended that Lexmark acted outside the scope of the patent grant. *Arizona Cartridge Remanufacturers Ass'n v. Lexmark Int'l Inc.*, 421 F.3d 981, 987 (9th Cir. 2005).

30. Following a six-week trial, the jury returned a verdict that Static Control was not liable for inducement of patent infringement, and made advisory findings that Lexmark engaged in anticompetitive conduct that would support a determination of patent misuse.

31. *Quanta*, 615 F. Supp. 2d at 584-589.

Notwithstanding the district court's holding and this Court's holding in *Quanta*, Lexmark persisted in marketing toner cartridges with the same label on the outside of the box, while appealing the district court's order. On appeal, the Sixth Circuit upheld the district court order, but found it unnecessary to address its reasoning for purposes of the appeal. The jury had found no infringement by Static Control even under the incorrect assumption that the rechargers' activities were subject to a post-sale restriction.[32] Thus, the court observed that the outcome of the appeal – affirmance of the jury verdict of non-infringement—would be the same regardless of whether patent rights in the cartridges were exhausted. Reflecting the uncertainties left by the Federal Circuit's post-*Quanta* decisions, the Sixth Circuit concluded its brief discussion on patent exhaustion: "We therefore decline to resolve this extremely complex and unsettled question, because it would have no relevance to the outcome of this appeal."[33]

Since that opinion, Lexmark has ratcheted up its efforts to impose post-sale use restrictions on its products, by adding a box label "license" to its printers. Thus,

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32. *Static Control Components, Inc. v. Lexmark Int'l, Inc.*, 697 F.3d 387, 420-421 (6th Cir. 2012).

33. *Id.* at 421. Illustrative of the "complexities" referenced by that court, during the pendency of the appeal the parties filed supplemental notices of authority based on the Federal Circuit decisions regarding patent exhaustion in *Bowman*, *Tessera, Inc. v. Int'l Trade Comm'n*, 646 F.3d 1357, 1370 (Fed Cir. 2011) (acknowledging that a requirement to pay royalties is a post-sale condition that did not "convert initial authorized sales into unauthorized sales for purposes of patent exhaustion"), and *Ninestar Tech. Co. v. Int'l Trade Comm'n*, 667 F.3d 1373 (Fed. Cir. 2012) (involving exhaustion and foreign sales).

printers sold by Lexmark now assert, under the guise of a "patent license," that consumers who open the printer box agree to only use genuine Lexmark cartridges in the printer, to return those cartridges only to Lexmark for recycling or remanufacture, and to pass this "license" on to any subsequent owner of the printer.[34] Such attempts to invoke patent law to impose post-sale use restrictions should be considered null and void and, in appropriate

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34. Lexmark's new post-sale restrictions against use of its printers reads:

> "**IMPORTANT: PLEASE READ BEFORE OPENING:** Opening this package, installing the printing device software, or using the products inside confirms your acceptance of the following licenses/agreements. **License:** The patented printer inside is licensed for, and designed to work with only genuine Lexmark toner cartridges and developer components for the life of the patented printer. You agree to: (1) use only genuine Lexmark toner cartridges and developer components with this printer except as otherwise provided below, and (2) pass this license/agreement to any subsequent user of this printer. The patented Lexmark toner cartridges and developer components inside are licensed subject to restriction that they may be used only once. Following their initial use, you agree to return them only to Lexmark for remanufacturing and recycling. Lexmark toner cartridges are designed to stop working after delivering a fixed amount of toner. A variable amount of toner may remain in them when replacement is required. **If you do not accept these terms, return the unopened package to your point of purchase.** Replacement toner cartridge(s) sold without these terms are available through www.lexmark.com, may be refilled by you, or a third party, as the only cartridge alternative to be used with the licensed printer."

cases, patent misuse.[35] But until and unless this issue is settled once and for all by this Court, those who supply and repair products with replaceable parts will be subjected to threats of infringement litigation, and consumers will unjustly bear the costs of the market confusion sown by the patent owner.[36]

Competitors in supply, repair, and customization markets need a bright-line exhaustion test for exhaustion to stimulate investment and promote lawful commerce. Absent a clear rule that post-sale restrictions sound only in contract, any business owner considering entry into a repair or customization aftermarket would have to weigh the risk of unknowable patent infringement liability. This risk is all the more acute because many of these businesses begin life as small, family-owned enterprises. If suppliers and servicers cannot reasonably assess risks associated with their business plan, the threat of patent infringement litigation – with the potential for increased damages, attorney fee awards, and injunctions – will

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35. *Cf. Omega, S.A. v. Costco Wholesale Corp.*, CV 04-05443 TJH, 2011 WL 8492716 (E.D. Cal. Nov. 9, 2011) (Order and J.) (granting summary judgment, on remand of case involving copyright first sale doctrine, that plaintiff committed copyright misuse by engraving a copyrighted image on the reverse of a watch solely to enforce against unauthorized importation).

36. As another recent example, a patent owner asserted infringement against a competitor that made replacement cartridges for one-cup beverage brewing machines. The district court held the patent owner's attempt to impose post-sale restrictions on the use of the machine was foreclosed by *Quanta*. *Keurig Inc. v. Sturm Foods, Inc.*, CV 10-841-SLR, 2012 WL 4049799 (D. Del. Sept. 13, 2012).

stifle investment and chill competition.[37] By contrast, if potential liability is determined under contract rather than patent law, liability would lie against those who breach or tortiously interfere with the contract, but not those who use or repair a patented device beyond post-sale terms they may never have seen.

In sum, the Federal Circuit's "conditional sales" cases encroach upon the public interest by constricting the scope of permissible repair, contrary to the patent law precedents of this Court. Reversal of *Bowman* and re-affirmance of the Court's long-standing patent exhaustion rule will provide needed certainty to aftermarket repair industries, promote consumer benefits from competition in the supplies market, and reduce the risk of unwarranted patent infringement litigation – without depriving the patent owner of its right to receive remuneration upon authorized sale of a patented invention.

III. PROPER INTERPRETATION OF THE EXHAUSTION DOCTRINE MAINTAINS THE CRUCIAL ANTITRUST LAW REMEDY AGAINST ANTICOMPETITIVE COMMERCIAL CONDUCT BEYOND THE PATENTEE'S RIGHTS.

The Federal Circuit decisions from *Mallinckrodt* through *Quanta* also upset the equilibrium between patent and antitrust law. A patent "by its very nature is anticompetitive."[38] It is an exception to the rule against

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37. This concern is not merely hypothetical. Several cartridge rechargers testified in *Static Control* they decided for that precise reason not to repair or to stop repairing Lexmark cartridges.

38. *In re Ciprofloxin Hydrochloride Antitrust Litig.*, 544 F.3d. 1323, 1333 (Fed. Cir. 2008). *Accord, Precision Instrument Mfg. Co. v. Auto. Maint. Mach. Co.*, 324 U.S. 806, 816 (1945) ("a

monopolies; in effect, a limited monopoly granted to exclude others from manufacture, use, and sale of an invention. *See Illinois Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 44 (2006), quoting *Int'l Salt Co. v. United States*, 332 U.S. 392, 395 (1947). "One body of law creates and protects monopoly power while the other seeks to proscribe it." *United States v. Westinghouse Elec. Corp.*, 648 F.2d 642, 646 (9th Cir. 1981).

Notwithstanding, the Patent Act does not bestow a *carte blanche* privilege to violate the antitrust laws. As an exception to policies favoring free competition, the right to exclude should be construed within the scope of the patent grant, but no further. "Since patents are privileges restrictive of a free economy, the rights which Congress has attached to them must be strictly construed so as not to derogate from the general law beyond the necessary requirements of the patent statute."[39] In navigating these complementary, often conflicting, policies, the Federal Circuit holds the patent monopoly immunizes any anticompetitive effects of a patentee's conduct in all but three circumstances: (1) the exclusion misuses or extends the patent right beyond the scope of the patent grant (*e.g.*, seeking multiple royalties following the exhaustion or tying a patent license to purchase of

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patent is an exception to the general rule against monopolies and to the right of access to a free and open market").

39. *United States v. Masonite Corp.*, 316 U.S. 265, 279 (1942), citing *Univis Lens*, decided the same day. *See also, Simpson v. Union Oil Co.*, 377 U.S. 13, 24 (1964) ("The patent laws which give a 17-year monopoly on 'making, using, or selling the invention' are *in pari materia* with the antitrust laws and modify them *pro tanto*." *See also, Square D Co. v. Niagara Frontier Tariff Bureau*, 476 U.S. 409, 421 (1986) (exemptions from the antitrust laws are "strongly disfavored.").

unpatented goods); (2) the asserted patent was procured by knowing and willful fraud;[40] or, (3) the infringement suit is both objectively baseless and subjectively motivated by a desire to impose collateral anticompetitive harm.[41] Each of these requirements erects a high hurdle for any potential antitrust claim.

With respect to the first of the above conditions, the Federal Circuit holds, "[s]hould the restriction be found to be reasonably within the patent grant, *i.e.*, that it relates to subject matter within the scope of the patent claims, that ends the inquiry."[42] Therefore, the Federal

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40. *Walker Process Equip. Inc. v. Food Mach. & Chemical Corp.*, 382 U.S. 172 (1965).

41. *See Bard Peripheral Vascular v. WL Gore & Assoc.*, 682 F.3d 1003, 1007 (Fed. Cir. 2012); *In re Indep. Serv. Orgs. Antitrust Litig. (CSU et al. v. Xerox Corp.)*, 203 F.3d 1322, 1326 (Fed. Cir. 2000), *cert. denied* 531 U.S. 1143 (Feb. 20, 2001) ("*ISO Antitrust Litigation*"), quoting *Nobelpharma AB v. Implant Innovations Inc.*, 141 F.3d 1059, 1071 (Fed. Cir. 1998). In *ISO Antitrust Litigation*, the Federal Circuit found no violation of the Sherman Act from a unilateral refusal by Xerox to sell parts to independent service organizations unless they also were end-users of the Xerox copiers, on grounds that such a refusal, regardless of effect or motivation, fell within the scope of the patentee's exclusive rights.

42. *Mallinckrodt*, 976 F.2d at 708; *see also, Virginia Panel Corp. v. MAC Panel Co.*, 133 F.3d 860, 869 (Fed. Cir. 1997). *Compare, United States v. General Electric*, 272 U.S. 476, 489 (1942) (a patentee that has not granted title to the patent itself "may grant a license to make, use, and vend articles under the specifications of his patent for any royalty, or upon any condition the performance of which is reasonably within the reward which the patentee by the grant of the patent is entitled to secure."). The

Circuit's view that a post-sale condition on the use or sale of a patented article remains within the patent grant, even though title to the articles properly passed to the purchaser, constrains the operation of antitrust law. By exempting post-sale conditions from exhaustion, the Federal Circuit concomitantly expands the power of patent owners to preclude otherwise-lawful competition and eliminates available antitrust remedies against a patentee's otherwise *un*lawful conduct.[43] If post-sale conditions instead were assessed only under contract law, the patent owner would remain free to protect its interests against breaches of a valid agreement, but could not raise patent law to shield anticompetitive conduct.

To illustrate the significance of the patent exemption in the antitrust context, consider the results in two cases involving aftermarket services in the reprographics industry. In *Image Technical Services v. Eastman Kodak*, Kodak adopted policies to deprive independent companies of parts needed to compete for printer repair services. The Ninth Circuit held Kodak's desire as a patent owner to exclude others was a presumptively valid business justification under antitrust law, rebuttable by evidence that the reliance on the patent right was subjectively

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Federal Circuit's formulation in *Mallinckrodt* appears narrowly to focus only on the scope of the claims. Anticompetitive effects also occur where a restriction strays beyond the substantive or temporal rights granted under patent law.

43. *See Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1216 (9th Cir. 1997) ("Nor does the right of exclusion [under patent law] protect an attempt to extend a lawful monopoly beyond the grant of a patent.... Much depends, therefore, on the definition of the patent grant and the relevant market.").

pretextual. The court, however, found ample evidence of pretext. The patent justification played no part in Kodak's actual decision to withhold sales of parts, and the sales ban applied to thousands of parts though only 65 were patented. 125 F.3d at 1219-1220.[44] A different result would have issued from the Federal Circuit. Under *Mallinckrodt*, it is irrelevant that a claimed reliance on the patent is subjectively pretextual if the restriction *could* be justified under the patent grant. 976 F.2d at 708. The Federal Circuit reified this holding in *ISO Antitrust Litigation* by rejecting the Ninth Circuit's approach from *Image Technical Services*: "We therefore will not inquire into [the patent owner's] subjective motivation for exerting his statutory rights, even though his refusal to sell or license his patented invention may have an anticompetitive effect, so long as that anticompetitive effect is not illegally extended beyond the statutory patent grant." 203 F. 3d at 1327-1328.

The Federal Circuit "conditional sales" approach to exhaustion creates further conflict with the antitrust laws. If a valid post-sale restriction is to be enforced under contract law rather than patent law, a patent owner cannot seek to justify the anticompetitive effects

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44. Kodak had not claimed the right to exclude under patent law as a justification for its conduct when it initially sought early summary judgment against the ISOs. *See Eastman Kodak*, 504 U.S. at 461; *ISO Antitrust Litig.*, 203 F.3d at 1327. While there perhaps is some ambiguity whether the Ninth Circuit would have decided *ISO Antitrust Litigation* in the same way as the Federal Circuit, the Federal Circuit's explicit rejection of *Image Technical Services* suggests that it would ignore a wholly pretextual assertion of patent rights so long as a hypothetical non-pretextual assertion of patent rights would not be objectively baseless. *Id.*

of such a restriction under its patent grant. By sweeping post-sale conditions within the patent right, the Federal Circuit improperly broadens the patent owner's right to exclude and narrows the field of lawful competition. While post-sale restrictions seeking multiple royalties on the same articles (as in *Quanta*) or promoting sales of more aftermarket supplies (as in *Mallinckrodt* and *Static Control*) may further the commercial interests of the patent owner, profit maximization is not the ultimate aim of the patent laws.[45]

IV. A BROAD PATENT EXHAUSTION RULE REMAINS ESSENTIAL TO ROBUST COMMERCE.

The Federal Circuit has steered the patent right on a collision course with the law of patent exhaustion, permissible repair, implied license, and antitrust law. While re-establishing the clarity of this Court's precedents on patent exhaustion is vital as a matter of legal doctrine, it is equally essential to robust commerce.

Patents are ubiquitous in modern American life, from patented carpet fibers under our feet each morning to the toothbrush we use at night, from computers and cell phones we use at work to electronic entertainment products we enjoy at home. Such patents range in importance from fundamental inventions to minor improvements, but the patent laws endow each patent owner with the same panoply of rights.

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45. *See, e.g.*, *Motion Picture Patents Co.*, 243 U.S. at 510-511.

Because the patent monopoly stands as a government-granted exception to laws promoting open commerce and fair competition, decisions that expand patent rights necessarily limit free commerce by others. It therefore is essential that the rights of patent owners be limited to those enumerated in the Patent Act. Consumers with title to the patented goods must have a right to resell, reuse, and repair them. Companies that compete against the patent owner must have the right to compete for the sale of supplies and the provision of services that do not reconstruct or practice the patented invention.

Consumers need to understand *their* full panoply of rights upon obtaining title to the property they buy. As this Court noted in a related context, total cost information in the hands of the purchaser supports robust competition in both primary markets and aftermarkets, while imperfect information tends to be exploited by would-be aftermarket monopolists.[46] The Federal Circuit imprimatur on post-sale patent restrictions deprives consumers of key information at the time of purchase as to the costs of repair and upgrade, thereby abetting unfair competition in contravention of sound economic policy.

Increasingly in modern commerce, sellers attach post-sale adhesion contracts such as shrink-wrap and electronic click-wrap agreements to goods sold and services delivered to individual and business consumers. Yet, today's electronic commerce also affords consumers

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46. *See Eastman Kodak*, 504 U.S. at 473-476, describing how the difficulty of ascertaining total cost of ownership at the time of purchase renders end users vulnerable to supracompetitive pricing.

greater opportunities to resell and repair their goods. Used products from small auto parts to the cars and trucks themselves are sold and resold directly to other consumers through electronic commerce sites such as ebay.com and Craig's List (not just through traditional "brick-and-mortar" stores). Any post-sale restriction that deprives consumers of their right to repair or resell articles ripples through this downstream economy. Modern commerce will be better served if patent rights are exhausted upon authorized sale, and post-sale restrictions are subject only to contract remedies and antitrust defenses.

As a matter of public policy, lawful aftermarket commerce thrives only if the patent exhaustion doctrine leaves room for robust competition, and consumers and competitors can know in advance whether their conduct is lawful. Without a clear definition of the right to compete post-sale, the law leaves insufficient incentive to invest in products and services that complement patented goods without infringing the patent right, and denies consumers the benefits of lower prices and innovation that result from fair and open competition.

From the mid-19th century through *Quanta*, the Court defined in the exhaustion doctrine a clear line of demarcation between patent rights and commercial freedom. Businesses and consumers will benefit from reaffirmation of the Court's bright-line rule that patent rights and patent infringement suits cannot be revived by post-sale conditions.

CONCLUSION

The judgment of the Federal Circuit should be reversed.

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AMICUS CURIAE BRIEF

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VERNON HUGH BOWMAN,
Petitioner,

v.

MONSANTO COMPANY and
MONSANTO TECHNOLOGY LLC,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF OF *AMICUS CURIAE* BAYHDOLE25, INC. IN SUPPORT OF AFFIRMANCE

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INTEREST OF *AMICUS CURIAE*[1]

BayhDole25, Inc. ("BayhDole25") is a non-profit, non-governmental organization named for the Bayh-Dole Act of 1980 ("Bayh-Dole") and related legislation, and founded on the twenty-fifth anniversary of passage of the Act. BayhDole25 does not receive federal funding, nor has it received financial support from research institutions, universities, or individual biotechnology companies.

BayhDole25's mission is to increase awareness of the importance of Bayh-Dole for enabling an environment for commercialization and assimilation of new technologies for the creation of economic and social benefit. Since incorporation in 2006, BayhDole25 and its Board have made important contributions to the understanding of public policy priorities relating to technology transfer and the key role of Bayh-Dole in continued United States global competitiveness, particularly in the life sciences area.[2]

BayhDole25's educational materials, capacity building programs and web site have become "go-to" resources for policy makers domestically and around

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[1] No counsel for a party authored this brief in whole or in part, nor made a monetary contribution intended to fund the preparation or submission of the brief. No one other than *amicus* or counsel made a monetary contribution to the preparation or submission of this brief. Pursuant to this Court's Rule 37.3(a), letters of consent were filed by the parties.

[2] BayhDole25 publications and related presentations are available online at: http://www.bayhdole25.org/resources (last visited January 14, 2013).

the world.[3] Since 2006, BayhDole25 has participated in numerous science and technology seminars in the United States, as well as in Brazil, China, Chile, France, India and Italy, where the benefits of a Bayh-Dole-type approach have been showcased as the way to commercialize public investment in scientific research. The technology transfer scheme of Bayh-Dole, in which ownership of government funded inventions are maintained by the research entities, has been emulated around the world with great success. *See* The Bayh-Dole Act at 25, at 37-46 (Apr. 17, 2006) (citing both Organization for Economic Cooperation and Development ("OECD") members and advanced developing countries that have benefited from adoption of technology transfer statutes or related mechanisms.[4])

The Parties and other *amici* represent the interests of innovative agricultural companies and commercial farmers and, of course, the Government.

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[3] For example, BayhDole25 publications were cited by *amicus curiae* Massachusetts Institute of Technology in its Brief in Support of Petitioner for Writ of Certiorari, at 6, 8, in *Board of Trustees of the Leland Stanford Junior University v. Roche Molecular Systems, Inc.*, No. 09-1159. Internationally, BayhDole25 publications have distributed by WIPO. *See* http://www.wipo.int/sme/fr/newsletter/2010/news_0003.html (last visited on January 14, 2013). They have also been cited by policy makers in South Africa and India, among others. Closer to home, the Levin Institute of the State University of New York recommends the use of BayhDole25's IP Toolkit for an understanding of intellectual property globalization. *See* http://www.globalization101.org/suggested-readings-8/ (last visited on January 14, 2013).

[4] Available online at: http://www.bayhdole25.org/whitepaper (last visited on January 14, 2013).

Although BayhDole25 is not an economic stakeholder, it has the broader mission of advocating for the powerful social and economic benefits that have continued to flow from technology transfer relating to agricultural biotechnology advances, both in the United States and in developing and developed countries around the world. As such, BayhDole25 is perhaps uniquely situated to provide an additional perspective that may be useful to the Court.

SUMMARY OF THE ARGUMENT

This case commenced as a straightforward dispute over the failure of Petitioner to pay for the continued use of Respondents' patented technology—genetically modified soybeans known as Roundup Ready® soybeans—over several years. In simplistic terms, Respondents' patented technology provides commercial benefits to farmers who gain access to such technology through a contract known as the Technology Agreement. The Parties agree on that much. The root cause of this dispute is the commercial interest of Petitioner in Roundup Ready® technology, beyond the agreed use under the Technology Agreement, for his second season planting.

Amicus supports the view of the Petitioner and a number of *amici* that the Court should give great weight to the contractual elements in this case. The Petitioner, however, has glossed-over critical elements related to the Technology Agreement and the historical purpose and role of commodity grain elevators that call into question whether or not Petitioner has met obligations outlined in the Technology Agreement.

Amicus seeks to provide broader context demonstrating that Petitioner's admitted activities represent transactions intended to essentially "launder" the Respondents' Roundup Ready® technology through the grain elevator, activities that were neither intended nor anticipated under the Technology Agreement. Further facts of the case reveal substantial differences between the instant case and *Quanta Computer, Inc.* v. *LG Electronics, Inc.*, 553 U.S. 617 (2008), and other precedents supporting application of the exhaustion doctrine, leading to the conclusion that Respondents' patent rights—and attendant compensation for use of such rights—should continue beyond the first sale of Roundup Ready® soybeans.

This compensation in turn supports long-term investment in new technologies for the continued vibrancy of U.S. agricultural biotechnology, where the private sector now provides the lion's share of R&D critical to continuing agricultural productivity gains. Like never before, innovative agricultural biotechnology companies play a key role in the commercialization and assimilation of advanced technologies for creation of economic and social value in the United States, as well as to meet global challenges associated with population growth and climate change.

Amicus relate the role of Petitioner, Respondents and other stakeholders in the historical social contract for technology transfer that has fueled growth in agricultural productivity and global development. *Amicus* hopes that this broader context and discussion of the global social contract around technology transfer and commercialization of agricultural tech-

nologies may be helpful to improve an understanding of the issues in this case.

ARGUMENT

I. CONTRACTUAL LIMITATIONS VIOLATED BY PETITIONER AND IMPLICATIONS FOR APPLICATION OF THE EXHAUSTION DOCTRINE

This case commenced as a dispute over the use of Respondents' patented genetically modified seeds, known as Roundup Ready® soybeans, spanning several years. Pet. App. 20a-23a. *Amicus* agrees with other *amicus* Knowledge Ecology International ("KEI"),[5] that the Court should seek to resolve this case on contractual grounds, and believes that a full understanding of the relevant facts—including factual background glossed-over by Petitioner—lead to the conclusion that Petitioner violated the letter and spirit of the Technology Agreement. The factual background underlying Petitioner's transactions also help to distinguish the instant case from *Quanta*) and related precedents concerning the exhaustion doctrine, where the soybeans have many ultimate uses other than planting.

A. THE TECHNOLOGY AGREEMENT

The Parties agree that Respondents license producers to sell Roundup Ready® soybeans to growers for use during a single planting season under the Technology Agreement. As one of Respondents' licensed seed producers, Pioneer Hi-Bred ("Pioneer")

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[5] *See* Brief of *Amicus Curiae* Knowledge Ecology International in Support of Petitioner.

sold Pioneer Hi-Bred® brand seeds containing the Roundup Ready® technology to Petitioner over a number of years. Pet. App. 20a-21a.

Pioneer required Petitioner to execute the "Pioneer Hi-Bred Technology Agreement," restricting Petitioner's use of the soybeans. The Pioneer Technology Agreement contains language and restrictions identical to Respondents' Standard Form Technology Agreements. Specifically, Petitioner agreed: (1) "[t]o use the seed containing the subject technology for planting a commercial crop only in a single season"; (2) "[t]o not supply any of this seed to any other person or entity for planting, and not to save any crop produced from this seed for replanting, or supply saved seed to anyone for replanting"; (3) "[t]o not use this seed or its progeny or provide it to anyone for crop breeding, seed production or research (other than to make agronomic comparisons and conduct yield testing)." Pet. App. 6a-9a, 21a; JA27a; *see also* Fed. Cir. JA A0284-A0315.

Under the Technology Agreement, Petitioner was allowed to use or sell the crop produced from the purchased seed for purposes other than for planting or saving for future seasons. (The Technology Agreement does not enumerate the entire universe of permitted uses.) The Technology Agreement remains in effect perpetually until cancelled by the Parties or replaced by another agreement. Petitioner executed the Technology Agreement in 2002. Pet. App. 21a; JA27a.

Petitioner's activities under the Technology Agreement raise a number of questions that are critical to a full understanding of the case, including:

- Why does the Technology Agreement expressly prohibit use of the soybean crop for planting and agricultural cultivation but not sale to commodity grain elevators?
- Does Petitioner's sale to and repurchase of soybeans from the commodity grain elevator and related seed-saving violate the Technology Agreement?
- Does the historical role of grain elevators and the purposes for which they convey their products vitiate the assertion that the Petitioner's actions were in good faith?

B. Commodity Grain Elevators

The clear intent of the Technology Agreement is to limit licensees commercial use of the Roundup Ready® technology to a single planting season. If this is the case, then, why did Respondents not contractually bar sale to commodity grain elevators while explicitly prohibiting any sale for the purpose of, or leading to, planting or crop breeding?

The answer to this important question lays in the important continuing role played by commodity grain elevators in the U.S. agricultural supply chain. As one global thought-leader has mentioned:

> Modern agriculture in developed countries including the United States involves far more than farms and farmers—it depends on enormous, highly sophisticated systems that move, store and processes producers' output

throughout an extensive value chain that extends to food products and final consumers.[6]

Commodity grain elevators are the first link between the farm-gate and the marketplace, and act as key intermediaries purchasing products from farmers for distribution locally, regionally and internationally. Commodity grain elevators typically sell products to meet a range of needs, including:

- Direct use as feed for livestock,
- Milling or other processing for industrial or food products, and
- Shipment to markets, including possible export to world markets.[7]

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[6] William C. Motes, "Modern Agriculture and its Benefits: Trends, Implications and Outlook," Informa Economics (March 2010), p. 13. ("[T]hese activities taken together contribute well over $1.2 trillion to the US GDP annually and support nearly 24 million jobs (Table 4). And, while farm production and productivity are the bedrock of this system, they account directly for only small shares of the system's GDP and jobs—6 percent and 8 percent, respectively." (Table omitted).).

[7] This brief description fails to capture the complex and varied support provided by commodity grain dealers and related businesses, including:

- **country elevators** that provide storage, merchandising and farm supply services to farmer-customers.
- **feed mills** that manufacture premixes and complete feeds for the livestock, poultry, aquaculture and pet food industries.
- **export elevators** that merchandise and ship U.S. grains, oilseeds and processed commodities to foreign customers.
- **cash grain and feed merchandisers** who buy and sell grains, oilseeds and grain products.

With this backdrop, it becomes clear that barring commercial sale of the soybean crop to grain elevators would be impracticable and would impose unreasonable added transaction fees and logistical burdens onto farmers.

C. PETITIONER'S ACTIVITIES IN VIOLATION OF THE LETTER AND SPIRIT OF THE TECHNOLOGY AGREEMENT

The Parties agree that each year Petitioner sold his first season crop to a local commodity grain elevator with the intention of re-purchasing the crop—*for use as seed for planting, and not as a commodity*—in order to gain continued commercial benefit without payment for that benefit. Pet. App. 22a-23a. Petitioner anticipated that a large percentage of the commodity soybeans he bought would contain the Roundup Ready® technology. Pet. App. 22a-23a.

- **commodity futures brokers and commission merchants** who provide hedging services to grain buyers and sellers through the use of futures markets.
- **end users** of grain and grain products, such as:
  - **grain processors and millers** who process raw grain into myriad products such as flour, corn meal and syrup, and soybean oil and meal - for human and animal consumption, and industrial uses;
  - **livestock and poultry integrators**; and
  - **biofuels producers**, who manufacture fuel ethanol and soy diesel, as well as coproduct ingredients for animal feed.

http://www.ngfa.org/who-we-are.cfm (last visited on January 14, 2013). For further interesting reading about the historical importance of commodity grain dealers, *see* http://www.buffalohistoryworks.com/grain/milling/milling.htm (last visited on January 14, 2013) and http://myplace.frontier.com/~chester.history/id133.html (last visited on January 14, 2013).

Also, Petitioner subsequently and successively saved seed containing the Roundup Ready® technology from his second season crop to use in future seasons. Pet. App. 22a-23a. Petitioner and supporting *amici* assert that these activities do not violate the Technology Agreement and further that Respondents should have anticipated these activities in the drafting of the Technology Agreement.

As outlined above, though, Petitioner's intentional use of the grain elevator to essentially "launder" the Roundup Ready® technology—*i.e.*, delivering his soybean crop on one end of the grain elevator and for all intents and purposes re-purchasing the same or similar soybeans on the other end for planting—is an atypical and unconventional use of commodity grain elevators. In historical terms, then, Petitioner's sale and subsequent repurchase of his first season crop—or essentially identical soybeans—should be viewed as extraordinary and unexpected.

In this context, should Respondents have amended the Technology Agreement in anticipation of Petitioner's actions? Or has Petitioner violated the letter and spirit of the Technology Agreement?

Reviewing again the Technology Agreement, Petitioner is authorized to produce a single crop, leaving open the ability of Petitioner to convey that crop *as a commodity* to a grain elevator. The Technology Agreement also states that Petitioner agrees "[t]o not supply any of this seed to any other person or entity for planting, and not to save any crop produced from this seed for replanting, or supply saved seed to anyone for replanting" and "[t]o not use this seed or its progeny or provide it to anyone for crop

breeding, seed production or research." Pet. App. 6a-9a, 21a; JA27a; *see also* Fed. Cir. JA A0284-A0315.

Any temporary or "strawperson" sale—*i.e.*, a transaction entered into for the explicit purpose of repurchasing soybeans containing the Roundup Ready® technology for planting—undermines the letter and spirit of the Technology Agreement. Petitioner was aware that the vast majority of seed purchased by the grain elevator would share the Roundup Ready® trait, enabling Petitioner to continue to gain commercial benefit by planting the soybeans during the second season. Pet. App. 7a-9a, 32a-33a. Petitioner's activities should not be rewarded.

Taking all of the above into consideration, *amicus* finds it disingenuous for the Petitioner to argue that his activities complied with his contractual obligations under the Technology Agreement as written, and that Respondents should have anticipated Petitioner's activities by barring sale to grain elevators in the Technology Agreement. Given the continuing critical importance of access to commodity grain elevators for farmers and the historical and conventional purposes for which farmers use grain elevators, it is both impracticable and superfluous for the Technology Agreement to bar such activities. Nor is it reasonable to assert that Respondents should anticipate every potential activity that a licensee may undertake in violation of the letter and spirit of the Technology Agreement.

As noted by KEI and other *amici*, this Court should look to the contractual elements first as the

best way to resolve this case, where Petitioner's activities violated both explicit and implied restrictions under the Technology Agreement.

D. Exhaustion of Patent Rights and Self-Replicating Technology

In granting Petitioner's Writ of Certiorari, this Court expressed particular interest in two questions relating to whether authorized sale of the crop from Petitioner's first season should result in patent exhaustion, as well as whether any exception to exhaustion is required for genetically modified seeds as "self-replicating" technologies.

As outlined above, *amicus* agrees with other *amici* that this case should be determined on the basis of the contractual elements. Based on the facts of the case, however, *amicus* believes that the Court need not reach the first question given that Petitioner's actions do not satisfy the requirements of authorized sale as reasonably intended and mutually understood under the Technology Agreement.

With regard to the issue of "self-replicating" technologies, based solely on the precedents cited in Petitioner's brief, *amicus* respectfully submit that the facts do not support the conclusion that the genetically modified seeds should be categorized as "self-replicating." Petitioner repeats throughout his brief that the sole purpose and reasonable use for the technology is as seed for planting and, therefore, the technology is "self-replicating."

Like Maslow's hammer,[8] Petitioner is only able to see one purpose and reasonable use for the soybeans of his first season crop. However, a variety of purposes and normal uses for soybeans are included in the Technology Agreement itself, including: crop breeding, R&D, generation of herbicide registration data, and seed production. Pet. App. 6a-7a, 21a; JA27a; *see also* Fed. Cir. JA A0284-A0315. As noted above, other additional purposes and reasonable uses for Petitioner's crop from the first season include as sale to a grain elevator as a commodity product, feed for livestock, processing for industrial uses (including in biofuels) as well as for a range of food products, and for export overseas. All of these enumerated purposes or reasonable uses are possible without replication.

Petitioner's and some supporting *amici*'s assertion that planting—*e.g.*, replication—is the only purpose or reasonable use for Petitioner's crop from the first season is demonstrably false. As such, it is *amicus'* view that the Court also need not reach the second question presented.

II. IMPORTANCE OF EFFECTIVE PATENT PROTECTION FOR ADVANCED AGRICULTURAL TECHNOLOGIES

In seeking reversal of the decision in the Court of Appeals for the Federal Circuit, Petitioner claims entitlement to continued commercial use of the

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[8] *See* Abraham Maslow, *The Psychology of Science: A Reconnaissance* 1966 ("I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail.").

Roundup Ready® technology without compensation to the innovator, Respondents.

This case is framed as a "David and Goliath" dispute, with Petitioner as David and Respondents as Goliath—large anonymous global companies that can bear the loss of compensation for use of the Roundup Ready® technology in the second and further season plantings.[9] This precedent, however, would apply to any and all innovators, fundamentally altering the existing business model for agricultural biotechnology—substantially curtailing return on investment with profound adverse consequences for global development.

In this broader context, for every commercial farmer like Petitioner in the U.S. claiming harm from payment for continued access to advanced seed technologies—where the eight fields at issue in this case alone total 399 acres—there may be tens of thousands of subsistence farmers in developing countries operating on a few hectares or less, and relying on continued transfer of technology from innovative private agricultural companies to meet agricultural challenges in the 21st century. In the

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[9] The undercurrent of hostility to agro-biotechnology companies implicit in filings of the Petitioner and supporting *amici* bears close scrutiny. As noted by Michael Lynas, long-time anti-GMO activist who has now publicly recanted and reversed his position: "In particular one critic said to me: so you're opposed to GM on the basis that it is marketed by big corporations. Are you also opposed to the wheel because it is marketed by the big auto companies?" Available online at: http://www.marklynas.org/2013/01/lecture-to-oxford-farming-conference-3-january-2013/ (last visited on January 15, 2013).

grander scheme of global agriculture, Petitioner is a Goliath.[10]

This section reviews this broader context with regard to the importance of continuing agricultural-biotechnology R&D for improved agricultural productivity and poverty reduction in the developing world.[11] Private investment has been a major driver

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[10] Even in the U.S., the vast majority of farms are owned and operated by families like Petitioner, not faceless corporations. *See* Motes, p. 31 ("Despite assertions that the modern food production is corporatized, it is not. For example, in the United States, families own almost 96 percent of the 2.2 million farms, including the vast majority of the largest operations. Small-scale agriculture, rather than being driven out, is on the upswing with growing numbers of such operations, although—after years of rapid growth—organic foods and beverages still account for less than 3 percent of US food sales.").

[11] Adoption of one such technology, insect-protected Bt cotton, by several million small farmers in developing countries such as China, South Africa, and Mexico has been associated with the following benefits:

> In China, a 1999-2001 survey of farmers demonstrated three-year average increased yields from Bt cotton of 523 kilograms per hectare (24%) over non-Bt cotton. Three-year net economic returns per hectare averaged US$332 for Bt cotton versus a loss of US$138 for non-Bt cotton—a difference of US$470. In South Africa, a three-year analysis of 2,200 small farmers from the Makhathini area demonstrating consistently higher yields and increased revenues for Bt versus non-Bt cotton farmers. Bt cotton farmers experienced increased gross margins of 531 to 742 South African rand per hectare (equivalent to US$86 to $93) versus non-Bt cotton farmers over the study period. In Mexico, a study documented the economic benefits of Bt cotton during 1998. The study demonstrated increased yield of 0.29 tons per hectare and reduced expenditures on seed and pesticides of US$83 per hectare, creating a

for increased agricultural productivity, greater efficiencies in water usage and reduced need for chemical fertilizers and/or crop protection products.[12] (Given the adverse climate for agricultural biotechnology in Europe,[13] much of the technology increasingly originates in the United States from companies like Respondents.[14])

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net economic advantage of US$626 per hectare for Bt cotton farmers versus non-Bt cotton farmers.

Motes, p. 23.

[12] *See* Clive James, "Progressing Public-Private Sector Partnerships in International Agricultural Research and Development," ISAAA Briefs, No. 4, ISAAA: Ithaca, NY (1997) p. 16 ("The advent of biotechnology has resulted in a significant change in the relative investments of the public and private sectors in agriculture, with the private sector now investing significantly more than the public sector in biotechnology R&D. As the adoption of biotechnology-based products in agriculture becomes more widespread, this gap between public and private sector investments is expected to increase. This trend will be accentuated by current government policies, in both industrial and developing countries, that encourage participation by the private sector in areas where it has comparative advantages over the public sector.").

[13] "BASF moves GM crop research to US," Nature Biotechnology 30, 204 (2012), available online at http://www.nature.com/nbt/journal/v30/n3/full/nbt0312-204b.html (last visited on January 14, 2013).

[14] J. Piesse and C. Thirtle, "Review: Agricultural R&D, technology and productivity," Phil. Trans. R. Soc. B (2010) 365, 3035–3047. ("BASF, Bayer, Syngenta, Dupont, Dow and Monsanto, together spend US$3.6 billion, compared with US$1.42 billion for the other 249 companies operating in these areas and US$4 billion for all the other areas. The total private expenditures on agricultural chemicals is US$2.65 billion and for seeds and biotechnology US$2.37 billion.").

A. Modern Agriculture's Crucial Role in Economic Development

The vital importance of food to physical, economic and cultural development and the importance of efficient, sustainable production, makes advanced agricultural technologies the best way of meeting the world's basic food needs while dealing with population growth and environmental challenges.[15] While the productivity gains of the U.S. agricultural sector over the last half-century in particular are well documented,[16] the important role of agro-biotechnology in continuing increased yields and growth in total productivity may be less well understood. Compared to traditional breeding methods, biotech-enabled agriculture methods and technologies have dramatically accelerated yields. As one global thought-leader has documented:

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[15] *See* Motes, p. 14. *See also* recent remarks of Mark Lynas: "So my message to the anti-GM lobby, from the ranks of the British aristocrats and celebrity chefs to the US foodies to the peasant groups of India is this. You are entitled to your views. But you must know by now that they are not supported by science. We are coming to a crunch point, and for the sake of both people and the planet, now is the time for you to get out of the way and let the rest of us get on with feeding the world sustainably." Available online at: http://www.marklynas.org/2013/01/lecture-to-oxford-farming-conference-3-january-2013/ (last visited on January 15, 2013).

[16] *See* David B. Oppedahl, "The Role of R&D in Agriculture and Related Industries: Today and Tomorrow—A conference summary," Chicago Fed Letter, ESSAYS ON ISSUES THE FEDERAL RESERVE BANK JANUARY 2008 OF CHICAGO NUMBER 246a," p.1 ("[I]n the 1981–2004 period, two-thirds was derived from growth in total factor productivity (TFP), which reflects changes in technology and other factors rather than labor-saving productivity alone. ").

> Biotech crops have benefited agriculture by enhancing productivity gains and increasing economic returns while reducing pesticide usage and lowering greenhouse gas emissions. Agricultural R&D has helped meet the rising demands for food, feed, and fuel, positioning agriculture for more advances in the future.[17]

The process of assimilation and dispersion of new technologies is time-consuming and depends on a range of local variables.[18] While global crop productivity has grown consistently over the past number of decades, there is anxiety in many quarters about whether it is on pace to meet the demands for food expected by 2050. Biotech-enabled methodologies and technologies are increasingly important to face the challenges of the 21st century.

B. Critical Role of Private Technology Transfer in Global Agricultural Development

Agricultural innovation followed the traditional model where publicly funded research in developed and developing countries outpaced private investment until the 1990s:

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[17] *See* Motes, p. 13.

[18] *See* Motes, p. 13 ("[S]uccess of modern systems depends on the development and maintenance of soil fertility through the specific provision of nutrients when they are depleted; of machine power and technology to create soil conditions necessary to promote plant growth with minimal disturbance and minimal soil loss; of the use of improved genetics for crops and livestock to enhance yields, quality and reliability; and, on modern genetic and other techniques to protect plants and livestock from losses to competing plants, diseases, drought insects and other threats.").

> Twenty years ago universities and public laboratories in the DCs did all the basic and strategic research and this created a global commons of intellectual property. Now Monsanto and Syngenta lead and the Consultative Group on International Agricultural Research (CGIAR) and the rest of the international public systems tend to follow.[19]

Growth of biotechnology methodologies and technologies require investment of intensive resources over a long time-period, development of large genetic databases and validation through field-testing.[20] This has led to a fundamental realignment, "with the private sector now investing significantly more than the public sector in biotechnology R&D."[21]

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[19] J. Piesse and C. Thirtle, p. 9.

[20] Oppedahl, p. 2.

[21] Clive James, p. 16 and p. 9. ("[A]s farmers use more purchased inputs and as the value-added in agriculture increasingly moves off the farm to the marketing and processing subsectors, it is likely that the incentives for private sector investments in agricultural research will grow. With current private sector global revenues in fertilizers, seeds, pesticides, and animal health alone estimated conservatively at approximately $70 billion per year, the private sector is an essential partner for the global public sector engaged in agricultural research."). *See also* http://www.marklynas.org/2013/01/lecture-to-oxford-farming-conference-3-january-2013/ (last visited on January 15, 2013) ("It now costs tens of millions to get a crop through the regulatory systems in different countries. In fact the latest figures I've just seen from CropLife suggest it costs $139 million to move from discovering a new crop trait to full commercialisation, so open-source or public sector biotech really does not stand a chance. There is a depressing irony here that the anti-biotech campaigners complain about GM crops only being mar-

Given the adverse agricultural biotechnology environment in Europe, vibrancy in American agricultural innovation has become the engine for innovation and transfer of technology to partners in the developing world.[22] Compensation paid by Petitioner and other American farmers to license advanced agricultural technologies like Roundup Ready® soybeans, accordingly, are an important part of the social contract supporting continued technology transfer needed for productivity gains and poverty reduction efforts in developing countries around the world. Petitioner's and other similarly situated parties refusal to compensate Respondents for continued use of the Roundup Ready® technology would upset the carefully constructed balance of benefits fueling technology transfer globally, potentially reversing hard-won gains of subsistence farmers in the developing world and elsewhere.

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keted by big corporations when this is a situation they have done more than anyone to help bring about.").

[22] *See, e.g.*, http://www.asti.cgiar.org/private-sector-research (last visited on January 14, 2013) ("Private investment in agricultural research is a potentially important contributor to increasing productivity and reducing poverty in developing countries. ASTI, in close collaboration with Rutgers University and McGill University, collected and analyzed detailed information on private agricultural R&D capacity and investment trends in Bangladesh, India, Kenya, Pakistan, Senegal, South Africa, Tanzania, and Zambia. . . Findings indicate that across all study countries, technologies transferred from foreign sources by private companies were found to be a primary driver of innovation, especially in the areas of crop protection, agrochemicals, poultry farming, agricultural machinery, and processing. While many surveyed companies conducted some level of their own in-country research, many were also engaged in the transfer of technologies from abroad.").

CONCLUSION

For the foregoing reasons, BayhDole25 asks that this Court affirm the decision of the U.S. Court of Appeals for the Federal Circuit. The Court should decline Petitioner's invitation to undermine the letter and spirit of the Technology Agreement. Any other result would turn the Patent Act on its head, deprive a broad class of innovators rights in the fruits of their inventive endeavors, undermine U.S. long-term R&D efforts, and dismantle the social contract for technology transfer of advanced technologies critical for global development and poverty reduction.

Respectfully submitted,

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17 January 2013

AMICUS CURIAE BRIEF

No. 11-796

In The Supreme Court of the United States

VERNON HUGH BOWMAN,
Petitioner,

v.

MONSANTO COMPANY, *ET AL.*,
Respondents.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF OF THE BIOTECHNOLOGY INDUSTRY ORGANIZATION AS *AMICUS CURIAE* IN SUPPORT OF RESPONDENTS

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QUESTION PRESENTED

Whether an authorized sale subject to a technology license of one generation of patented plant seed exhausts the patentee's rights in all subsequently made generations of the patented seed.

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In The
Supreme Court of the United States

No. 11-796

VERNON HUGH BOWMAN,
Petitioner,

v.

MONSANTO COMPANY, *ET AL.*,
Respondents.

ON WRIT OF CERTIORARI
TO THE UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

BRIEF OF THE BIOTECHNOLOGY INDUSTRY ORGANIZATION AS *AMICUS CURIAE* IN SUPPORT OF RESPONDENTS

INTEREST OF *AMICUS CURIAE*[1]

The Biotechnology Industry Organization ("BIO") is the principal trade association

[1] This brief is filed with the written consent of all parties, who have filed universal consent letters with the Court. Pursuant to Rule 37.6, no counsel for either party authored this brief in whole or in part, nor did any party or other person make a monetary contribution to the preparation or submission of this brief.

representing the biotechnology industry domestically and abroad. BIO has more than 1100 members, which span the profit and non-profit sectors and range from small start-up companies and biotechnology centers to research universities and Fortune 500 companies. Approximately 90% of BIO's corporate members are small or mid-size businesses that have annual revenues under $25 million.

Because modern biotechnological products commonly involve lengthy, expensive, and resource-intensive development periods, BIO's members depend critically on a strong, stable, and nationally uniform system of patent rights and protections. As this dispute involves the proper scope of patent protection for a biotechnological product—genetically engineered seed—BIO has a substantial interest in this Court's resolution of the case. In addition, the multifaceted experiences of BIO's members can provide the Court with unique insights on the essential role that patent rights play not only in agricultural advancements, but also in promoting medical, industrial, environmental, and scientific knowledge and discoveries.

STATEMENT

A. Biotechnology's Critical Innovations

The biotechnology industry is one of the most rapidly growing and innovative components of the United States economy. *See* Federal Trade Comm'n, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy (FTC Report)*

Ch. 3, p. 21 (2003) (noting the exceptionally "rapid" "pace of innovation in the biotechnology industry").[2] Biotechnology companies are engaged daily in inventing, discovering, and developing new scientific testing processes, pharmaceuticals, environmental products, and treatment protocols for health problems. Those biotechnology innovations provide life-saving medicines and diagnostic procedures, disease- and drought-resistant crops, and a host of promising scientific solutions for modern environmental, medical, and agricultural challenges.

For example, biotechnology products have provided more than 250 new therapies and vaccines for once untreatable diseases, such as cancer, diabetes, HIV/AIDS, and autoimmune disorders like multiple sclerosis and rheumatoid arthritis. In addition, there are currently more than 400 biotechnology drugs in clinical trials targeting more than 200 different diseases. Those and other biologic therapies account for an increasing share of new drugs. In 2011, twenty percent of the new drugs approved by the FDA were biologic drugs.[3]

Biotechnology research has also resulted in new and improved vaccines, including those protecting children against pneumococcal meningitis and rotavirus. *See, e.g.*, Roger Glass & Umesh

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[2] *See* White House Office of Science and Technology Policy, NATIONAL BIOECONOMY BLUEPRINT 1, 7 (2012), http://www.whitehouse.gov/sites/default/files/microsites/ostp/national_bioeconomy_blueprint_april_2012.pdf.

[3] Asher Mullard, *2011 FDA Drug Approvals*, 11 NATURE REVIEWS DRUG DISCOVERY 91, 91 (2012).

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Diagnostic tools developed using biotechnology offer faster and more accurate diagnoses for illnesses ranging from strep throat to heart disease. In addition, specific genetic tests have been developed to identify cancers that will respond to treatment with specialized drugs. Biotech research tools also made it possible to discover the complete sequence of the human genome, an extraordinary feat accomplished within fifty years after the structure of DNA was first discovered. *See* Francis Collins, *et al.*, *A Vision for the Future of Genomics Research*, 422 NATURE 835, 835 (2003). Combining that knowledge of the human genetic makeup with specially adapted biotech research methods has led to the development of rapid and reliable diagnostic tests for a multitude of genetic diseases, as well as forensic DNA tests that help to free the innocent and jail the guilty. Nicholas Wade, *A Revolution At 50; DNA Changed the World. Now What?*, N.Y. TIMES, Feb. 25, 2003, at F1.

Biotechnology products have further achieved significantly enhanced agricultural production by creating crop seeds, like the seeds at issue here, that are more productive because they are resistant to insects and/or herbicides. In addition, crops are being developed that will grow under adverse conditions such as water or nitrogen deficiency—vital developments for combating famine around the world. Indeed, "[b]iotech foods could improve food

yields by up to 25 percent in the developing world and feed the more than three billion people to be born in the next three decades."[4]

Finally, biotechnology research has provided new catalysts for improved industrial processes, such as paper manufacturing, renewable fuel sources, environmental clean-up technologies, and plastics. Those enhanced processes and products have led to dramatic energy savings, lower greenhouse gas emissions, reduced waste, and a more "bio-based economy."[5]

B. The Importance Of Patent Protection

Each of those products and discoveries, and countless others, resulted from years of investigation, research, and developmental efforts. That research and development process "is particularly lengthy for biotechnology firms, because biotechnology innovation is more uncertain than innovation in other industries." *FTC Report*, Ch. 3, p. 16. It takes on average 98 months to move a drug from clinical

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[4] Tommy Thompson, Secretary of Health & Human Services, *Biotechnology: Its Promise and Challenge in the New Century*, http://archive.hhs.gov/news/speech/2002/020211.html (Feb. 11, 2002) (last visited Jan. 20, 2013); *see* U.S. Dep't of Agric., *Frequently Asked Questions about Biotechnology* (2006), http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&navid=AGRICULTURE&contentid=BiotechnologyFAQs.xml.

[5] *See About BIO*, Biotechnology Industry Organization, http://www.bio.org/node/3089; *see also* Organization for Economic Cooperation and Development, *The Application of Biotechnology to Industrial Sustainability–A Primer* (2001), www.oecd.org/science/biotechnologypolicies/1947629.pdf.

development to regulatory approval, and for every successful biopharmaceutical, there are approximately 10,000 failed attempts.[6]

Furthermore, even when successful, the long and resource-intensive path from initial discovery of a biotechnology invention to the marketing of a useful product commonly involves multiple actors performing diverse developmental roles at different junctures. This is because "[t]he efforts required in bringing a therapy from discovery through development, regulatory approval, manufacturing and marketing are rarely the result of one company's efforts." [7] Congress, in fact, has recognized the importance of such collaborative efforts by passing the Bayh-Dole Act to, *inter alia*, "promote the commercialization and public availability of inventions" by establishing clear mechanisms for the allocation of distinct patent rights in a manner that ensures fair rewards at each step of the developmental process. 35 U.S.C. § 200.

Because biotechnology innovations require such a massive investment in research and development, "[t]he biotechnology industry is the most research and development intensive and capital-focused

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[6] Joseph DiMasi & Henry Grabowski, *The Cost of Biopharmaceutical R&D: Is Biotech Different?* 28 MANAGERIAL & DECISION ECON. 469, 473 (2007).

[7] *See* Joseph Scholl, WORKING TOGETHER IN THE PHARMACEUTICAL, BIOTECH AND MEDICAL DEVICE INDUSTRIES: CONTRACTUAL TERMS AND CONDITIONS 3 (2004), *available at*: http://www.kellogg.northwestern.edu/biotech/faculty/articles/working_together.pdf.

industry in the world."[8] In 2010 alone, publicly traded biotechnology companies in the United States spent $22.8 billion on research and development.[9]

For those reasons, "[b]iotechnology innovation is heavily dependent on the patent rights that have been available for biotechnology inventions since 1980." *FTC Report*, Ch. 3, p. 29. Patent rights and protections make possible the stage-by-stage sharing and development of biotechnology inventions, as well as the collaborations and licensing agreements that are indispensable for small biotechnology start-ups and research universities to develop their products. In particular, patent protections "help firms to recover high, fixed R&D costs and are particularly useful in enabling biotechnology companies, which are generally small in size, to attract capital investment and to contract with other firms for commercial development of their inventions." *FTC Report*, Ch. 3, p. 29.

SUMMARY OF ARGUMENT

This case is about the unauthorized making of a product, not patent exhaustion. The right to make an invention is and always has been separate and distinct from the right to use or sell the invention. To accept petitioner's proposition that the purchasers of

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[8] See NIH: Moving Research from the Bench to the Bedside: Hearing Before the Subcomm. on Health of the H. Comm. on Energy and Commerce, 108th Cong., 1st Sess. 49 (2003) (Phylliss Gardner, M.D.).

[9] Ernst & Young, Beyond Borders: Global Biotechnology Report 2011, at 37 (2011).

a single patented article obtain not only that article, but also the separate right to freely and perpetually make new copies of the invention, would effectively eviscerate the government-conferred patent monopoly.

This Court's precedents foreclose that position. The Court has uniformly limited patent exhaustion principles to the right to use the specific item sold. And for good reason. Conflation of the right to use an invention with the entirely separate right to make more quantities of it would undermine the ability of a patent holder to capture any meaningful return on its investment in innovation and its sharing of new knowledge with the public.

Petitioner's patent exhaustion argument thus gets patent principles exactly backwards: The replicability of some innovations magnifies—it does not weaken—the need for adherence to established rules. To permit a purchaser to make unlimited copies of the product, simply because the blueprint for reproduction is within the product and it is relatively easy to do so would unravel the entire structure of patent rights and economic incentives that underpins innovation in the biotechnology industry and elsewhere. The right to use must end when the purchaser turns to unauthorized making.

To hold otherwise, and condone uncontrolled reproduction after the first purchase, would not only destroy the value of the patent, but would also make it impossible to commercialize a product at reasonable cost. Worse still, consumers would have no guarantee that the resulting product—whether a seed, a vaccine, or a cell-line—had been produced in

the same quality-controlled environment or was free from unintended (and unwanted) traits caused by contamination in the production-by-copying process.

Instead, patent law has made biotechnology and other high-tech innovation possible by protecting innovators' rights with a reinforcing web of foundational patent rules, field-of-use licenses, and use restrictions that has fostered collaborative investments and research partnerships and paved the way for unparalleled scientific advances in recent years, benefitting industry, agriculture, and medicine alike. Under this Court's precedents, purchasers of patented products may enjoy the full benefit of their bargain; but they may not hijack the patentee's exclusive right to make new copies of the invention or to control its field of use.

ARGUMENT

Because the right to prohibit or control the reproduction of a discovery is vital to the promotion of innovation, the patent law invests those who hold a valid patent with, among other things, "the right to exclude others from making [or] using *** the invention." 35 U.S.C. § 154(a)(1). Petitioner's production of a new generation of seeds embodying respondents' patented invention through the application of specific cultivation techniques violated that fundamental patent protection. And the patent exhaustion rule does not shield petitioner's conduct because he made—not purchased or used—the infringing seeds. Furthermore, valid licensing restrictions forbade using the seeds for such unauthorized making.

I. PATENT EXHAUSTION DOES NOT APPLY BECAUSE PETITIONER INFRINGED BY MAKING, NOT USING, SEEDS EMBODYING RESPONDENTS' PATENTED INVENTION.

The act of infringement in this case was petitioner's repeated making of new generations of respondents' patented, glyphosate-resistant seed through the application of agricultural cultivation techniques. That act strikes at the core of patent law's most foundational protection—the patentee's right to exclude others from reproducing the patented product. Contrary to petitioner's entire argument, his infringing actions have nothing to do with patent exhaustion because the infringing seeds were made, not purchased; they were created by petitioner, not used after an authorized sale of those same patented seeds to petitioner. In other words, whatever patent rights were or were not retained by respondents in the commodity seed, petitioner's *use* of the commodity seed to plant a crop did not immunize his distinct patent-law violation of *making* a new generation of specifically glyphosate-resistant seeds that contained the Roundup Ready® trait. The biotechnology industry's ability to continue producing innovative products that save lives and promote economic growth hinges on the preservation of that critical distinction.

A. Patent Law Forbids the Unauthorized Making of a Patented Product

1. The Law's Distinct Prohibition on Making

The right to exclude others from making a patented invention is a fundamental property right of a patent owner. The plain text of the patent law empowers the patentee to "exclude others from making *** the invention," as well as "using, offering for sale, or selling" it. 35 U.S.C. § 154(a)(1). Indeed, that protection is an essential component of the quid that the patent law gives for the quo of disclosing the invention to the world and sharing new knowledge. *See Bonito Boats, Inc. v. Thunder Craft Boats, Inc.* 489 U.S. 141, 150-151 (1989) (patent law embodies "a carefully crafted bargain for encouraging the creation and disclosure of new, useful, and nonobvious advances in technology and design").

The Act's disjunctive listing of the different patent rights, moreover, underscores that "'[t]he right to manufacture, the right to sell, and the right to use are each substantive rights, and may be granted or conferred separately by the patentee.'" *Simpson v. Union Oil Co.*, 377 U.S. 13, 24 (1964); *see Adams v. Burke*, 84 U.S. (17 Wall.) 453, 456 (1873) (similar); *see generally Reiter v. Sonotone Corp.*, 442 U.S. 330, 339 (1979) ("[T]erms connected by a disjunctive" should "be given separate meanings, unless the context dictates otherwise.").

The Patent Act reconfirms the disjunctive character of patent rights by providing that

infringement occurs when a person "makes *** any patented invention" "without authority," just as much as when there is an unapproved "use[], offer[] to sell, or s[ale]" of the invention. 35 U.S.C. § 271(a). Accordingly, the patentee's exhaustion of one of those rights—such as use—does not exhaust the others. *See Bloomer v. McQuewan*, 55 U.S. (14 How.) 539, 549 (1852) (distinguishing between the right to make a machine and the right to use it); *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1573 (Fed. Cir. 1996) (the making of a patented product, even without a corresponding use or sale, constitutes infringement).

When Congress intends to depart from that traditional rule against the unauthorized making of protected intellectual property, it does so expressly. *See, e.g.*, Plant Variety Protection Act, 7 U.S.C. §§ 2543, 2544 (expressly creating exceptions to infringement for limited seed-saving and research activities involving sexually reproduced plants). The Patent Act, however, contains no parallel "exemption[] for *** saving seed." *J.E.M. AG Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 143 (2001) (utility patents). Rather, the patent law "confer[s] a greater scope of protection" on ordinary patents. *Id.* at 138. Petitioner's position, however, would erase that distinction and would engraft limitations on the patentee's exclusive right to make that Congress has not enacted.

2. An Authorized Sale Exhausts Only the Right to Use, Not to Make, the Sold Item

It is a "longstanding principle" of patent law that, "when a patented item is 'once lawfully made

and sold, there is no restriction on [its] *use* to be implied for the benefit of the patentee.'" *Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617, 630 (2008) (quoting *Adams*, 84 U.S. at 457). Under this rule of patent exhaustion, "the sale by a person who has the full right to make, sell, and use such a machine carries with it the right to the *use* of that machine to the full extent to which it can be *used*." *Adams*, 84 U.S. at 455 (emphasis added).

But it is equally well established that exhaustion of the patentee's right to regulate uses (including sales) of the vended item does not authorize the purchaser to *make* new versions of the patented product. "[T]he purchaser of the implement or machine for the purpose of using it in the ordinary pursuits of life *** does not acquire any right to construct another machine either for his own use or to be vended to another for any purpose." *Mitchell v. Hawley*, 83 U.S. (16 Wall.) 544, 548 (1872). Indeed, the distinction between "the right to make and vend the machine *** [and] the right to use it" is "plain." *Bloomer*, 55 U.S. at 549; *see United States v. Univis Lens Co.*, 316 U.S. 241, 249 (1942) (purchaser acquires the "right to use and sell").

A purchased product accordingly cannot be used to make new copies. For example, when a buckle from a patented cotton-bale tie is used to "make" a new tie, the creation of that new object embodying the patented buckle-and-tie mechanism constitutes infringement. *American Cotton-Tie Co. v. Simmons*, 106 U.S. 89, 93-94 (1882). Likewise a purchaser's unauthorized "reconstruction" (rather than routine repair) of a purchased product violates "the

patentee's right 'to exclude others from making' *** the article." *Wilbur-Ellis Co. v. Kuther*, 377 U.S. 422, 424 (1964); *accord Wilson v. Simpson*, 50 U.S. (9 How.) 109, 123-125 (1850).

The patent exhaustion doctrine, in short, is confined to a buyer's use of a purchased product; it does not in any way authorize the buyer to "'make a new article.'" *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 343 (1961). Quite the opposite, even after an authorized sale, "the prohibition that the product may not be the vehicle for a 'second creation of the patented entity' continues to apply, for such re-creation exceeds the rights that accompanied the initial sale." *Jazz Photo Corp. v. International Trade Comm'n*, 264 F.3d 1094, 1105 (Fed. Cir. 2001).

Indeed, patents would offer only ephemeral protection if the first sale of a patented product licensed the purchaser—and any downstream purchaser who could figure out how to construct the product from that template—to freely make and then sell new versions of the product fully embodying and exercising the patent. Furthermore, patentees could almost never recover the full value of their invention in that first, single sale.

This Court accordingly has confined the scope of patent exhaustion to the purchaser's right to use or sell only the specific article acquired. *See Quanta*, 553 U.S. at 625 ("The longstanding doctrine of patent exhaustion provides that the initial authorized sale of a patented item terminates all patent rights to *that item*.") (emphasis added); *Quanta*, 553 U.S. at 631, 638 (exhaustion applies "'with respect to the article

sold'"); *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 516 (1917) ("*[T]he article sold*" is "outside the monopoly of the patent law" after an unconditional sale.) (emphasis added); *Keeler v. Standard Folding-Bed Co.*, 157 U.S. 659, 666 (1895) ("[T]he purchase of *the article* from one authorized by the patentee to sell it, emancipates *such article* from any further subjection to the patent") (emphasis added). That is because "the purpose of the patent law is fulfilled with respect to *any particular article* when the patentee has received his reward for the use of his invention by the sale of the article." *Univis*, 316 U.S. at 251 (emphasis added).

However, the "purpose of the patent law['s]" protection of the patentee's exclusive right to *make* a biotechnological invention is decidedly "[un]fulfilled," *see Univis*, 316 U.S. at 251, by the mere sale of the first seed, cell line, vaccine dose, DNA construct, or bacterium to the first purchaser. The types of biotechnology innovations that are changing the face of medicine, science, environmental research, and agricultural progress require a much more calibrated and sensitive approach to patent rights than petitioner's incautious conflation of legitimate uses and illegitimate making would permit.

B. Petitioner Infringed By Making New Copies Of The Patented Product

Petitioner concedes (Br. 37) that "the exhaustion doctrine does not extend to the right to 'make' a new product." He also concedes that his "use" of commodity seeds "result[ed] in the creation of a new item." Pet. Br. 38 (emphasis omitted). There also is

no dispute that the "new item" "creat[ed]" was glyphosate-resistant seeds containing the Roundup Ready® trait. *Id.* at 38, 42. That is straightforward infringement, and petitioner's efforts to distinguish his "creation" of new glyphosate-resistant (actually, Roundup Ready® glyphosate-resistant seeds) from the infringing making of a patented article fail.

First, the plain meaning of the term "make" encompasses petitioner's "creation" (Br. 38) of a patented item because a patent also forbids "independent creation." *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 478 (1974). *See also Webster's New International Dictionary* 1485 (2d ed. 1959) (defining "make" as, *inter alia*, "to create," "to form or fashion physically," "to cause to exist," or to "bring about"); 9 *Oxford English Dictionary* 236 (2d ed. 1989) ("make" includes "to produce by action," or to "bring about"); *see generally Asgrow Seed Co. v. Winterboer*, 513 U.S. 179, 187 (1995) (ordinary meaning applies where common term is left undefined by Congress). Indeed, "[t]he right to make can scarcely be made plainer by definition," and is certainly broad enough to "embrace[] the construction of the thing invented." *Bauer & Cie v. O'Donnell*, 229 U.S. 1, 10 (1913).

Second, petitioner argues (Br. 42) that the seeds made themselves as the result of natural processes. That is both factually and legally wrong.

As a matter of fact, the seeds did not spontaneously "self-replicate" (Pet. Br. 42). Crops do not grow themselves—and certainly not in the commercial quantities petitioner has produced. *See* J.A.103a (602 acres grown). Petitioner's creation of

considerable quantities of glyphosate-resistant soybeans resulted from his application of systematic and deliberative agronomic efforts to duplicate the specific Roundup Ready® patented trait, including systematic planting, cultivating, and harvesting techniques applied to the commodity seed. In particular, by planting and then applying a glyphosate herbicide, he eliminated all of the inferior, weed-susceptible seeds and transformed his "undifferentiated," "impure," and "dirty" mixture (Pet. Br. 5) into purely glyphosate-resistant seeds containing the Roundup Ready® trait to which herbicide could safely be applied.

For similar reasons, petitioner's argument fails as a matter of law. The Patent Act holds petitioner accountable not for what the seeds did, but for what he did. Although infringement does not require intent, it does require human agency. The Patent Act provides that "*whoever*"—not "whatever"—"makes, uses, offers to sell, or sells" a patented invention is liable for infringement. 35 U.S.C. § 271(a) (emphasis added). The act of infringement, in other words, is not the biological capacity of seeds to reproduce. It is the efforts that petitioner applied repeatedly over nine planting seasons, Pet. App. 9a, to ensure that he did *not* harvest the natural "dirty," and impure byproduct of his commodity seed, but instead made large quantities of uniformly herbicide-resistant seed that substantially embodied the patented trait. Petitioner's actions, not nature, thus caused the

infringement, and that intervening human act of making is what the Patent Act polices. [10]

Third, for the same reason, petitioner's contention (Br. 42) that his creation of the patented seed inhered in its lawful use is wrong. The ordinary use of commodity soybeans is not planting, Resp. Br. 6 n.6, and the natural byproduct of planting commodity soybeans is *not* glyphosate-resistant seed. Petitioner's commercial quantities of cultivated, pure, glyphosate-resistant soybeans thus were not by themselves present or embodied in the commodity seed that petitioner purchased from the grain elevator (*see* Pet. Br. 5, 42). They were not even the raw progeny of the soybeans he bought. They were, instead, new and selectively cultivated seeds that survived the agronomic winnowing by which petitioner transformed impure commodity seed into uniformly herbicide-resistant seed fully embodying the patented Roundup Ready® trait.

Finally, this case is quite different from the computer method claims that were exhausted by an unconditional sale in *Quanta*, 553 U.S. 617. The specialized computer components at issue in *Quanta*

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[10] That petitioner used lawfully purchased soybeans as one step in his effort to create new, pure seeds carrying only the Roundup Ready® trait does nothing to insulate his behavior from liability. Infringers commonly use lawfully purchased, patented products—tools, chemicals, components—in the course of making a new infringing product. This case, moreover, does not involve accidental growth of seeds embodying the patented technology. *See* Resp. Br. 7-8, n.7 ("Monsanto has publicly committed not to assert its patent rights against persons who obtain its technology inadvertently.").

were used in combination with standard parts to practice the patented methods. *Id.* at 624. But the sale that led to the application of patent exhaustion was of each individual, unpatented component, not the patented method. *Id.* at 635-636. Consistent with the purposes of the patent exhaustion doctrine, the patentee was foreclosed from controlling the purchaser's use of each of those individual components, *see id.* at 625 (exhaustion applies "to that item"), particularly because the product's "only reasonable and intended use was to practice the patent," *id.* at 631-632.

That made sense because the only reason to buy the components was to practice the patent; that was "the only object of the sale," as the purchaser was "destined" to use it for that purpose and no other. *Univis*, 316 U.S. at 249, 251; *see Quanta*, 553 U.S. at 632 ("A microprocessor or chipset cannot function until it is connected to buses and memory. And here, as in *Univis*, the only apparent object of Intel's sales to Quanta was to permit Quanta to incorporate the Intel Products into computers that would practice the patents."). The patentee thus collected his fair value by selling the unfinished objects that contained all of the "inventive features" and were lacking only an unimportant assembly step to complete the patented method.

This case is very different. *Univis* authorized buyers to use their purchased lens blanks to make patented lenses; it did not authorize purchasers to produce an endless stream of their own lens blanks, or to grind more patented, finished lenses than their purchases of blanks would permit. Nor did *Quanta*

authorize purchasers to make more memory buses than they had bought. Patent exhaustion is item-specific; it simply exhausts patent rights in the one item sold for its destined use without destroying other patent rights.

Here, the reasonable and commonly intended use of commodity soybeans is for purposes other than planting (*e.g.*, animal feed); it is not for culling out glyphosate-resistant traits. Resp. Br. 6 n.6. Petitioner's planting of the elevator soybeans to grow a crop was anomalous, not destined. More importantly, future production of multiple generations of pure, glyphosate-resistant seed was in no way "the only apparent object," *Quanta*, 553 U.S. at 632, of either respondents' initial licensed sales of seeds to farmers under the Technology Agreement, or of petitioner's purchase of impure, commodity seed. Petitioner neither bargained for, nor received, the distinct right to practice the patent and make Roundup Ready® seed.[11]

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[11] Just as 100 lens blanks could be said to "embody" 100 finished lenses, not millions, if a 50 pound bag of authorized patented soybean seed embodies anything other than the seed itself, it is at most the approximately one acre of soybean plants that can be grown from that quantity of seed by the farmer who purchased and consumed the seed for planting, *not* endless generations of future soybeans.

C. Continued Enforcement Of The Distinction Between "Making" and "Using" Is Vital For Biotechnology

The patent law's fundamental distinction between making a new patent-embodying product and using a purchased product is vital to innovative development generally, and to biotechnological advancement in particular. In the biotech area, it commonly takes years of research, development, and investment to produce a new technology or product in usable form. But once it is available, that product's patented biological feature may be susceptible to relatively easy, high-volume replication.

It is patent law's longstanding prohibition against the unauthorized making of the patented product, and the law's equally lengthy recognition that a sale does not exhaust that "substantive right[]" to make, *Adams*, 84 U.S. at 456, that has made biotechnological development possible. More specifically, preserving the patentee's right to make the lifesaving vaccines, medical treatments, diagnostics, and other cutting-edge scientific products that are predicated on replicable forms of technology allows biotech innovations to be disclosed to the public without eviscerating the patent's protections at the moment of the first sale. With the right to make their patented product or process protected, patent holders can undertake prolonged, stage-by-stage development in partnership with other researchers and developers confident that cooperative use of their inventions will not imperil their patent rights.

For example, safeguarding the patentee's control over the making of its product has made it possible to obtain the capital investment needed to develop new antibody-based therapeutics. *See FTC Report*, Ch. 3, p. 15 (biotechnology industry "relies primarily on patents to provide incentives to invest in innovation"). That, in turn, spurred further investment and development in the diagnosis of certain types of cancer and the production of biological drugs for distinctly targeted treatments. *See* Martine Piccart-Gebhart *et al.*, *Trastuzumab after Adjuvant Chemotherapy in HER2-Positive Breast Cancer*, 353 NEW ENG. J. OF MED., 1659, 1659-1672 (2005).

Preserving patent protections has also allowed biotechnology research to focus on the treatment of infectious diseases through the development of replicable cell lines that, for example, efficiently produce anti-malarial drugs to combat a disease that kills nearly 1 million people each year. World Health Organization, GLOBAL BURDEN OF DISEASE: 2004 UPDATE (2008); *see* Victoria Hale, *et al.*, *Microbially Derived Artemisinin: A Biotechnology Solution to the Global Problem of Access to Affordable Antimalarial Drugs*, 77 (Supp. 6) AM. J. OF TROPICAL MED. AND HYGIENE 198, 198-202 (2007).

Petitioner's collapse of the right to use into the right to make, however, would effectively destroy the patent protection for those human-made living organisms—a patent right that this Court specifically recognized in *Diamond v. Chakrabarty*, 447 U.S. 303, 305 (1980) ("human-made, genetically engineered bacterium" qualified as patentable subject matter).

Biotechnologies like Monsanto's Roundup Ready® seed, the *Diamond* bacterium, manufactured DNA molecules, newly developed cell lines, vaccines, and nanotechnologies all take years and millions of dollars to develop. But once commercialized, they could be readily reproduced in large quantities with significantly less investment—and, worse still, with attendant risks to the public of contamination and lack of quality control by unauthorized copy-cat makers. The continued success of this research-driven industry and the public benefits it provides thus depend critically on strong patent rights that prevent unauthorized reproduction.

II. SALES CONDITIONS THAT REGULATE MANUFACTURING WHILE ALLOWING REASONABLE USE FALL OUTSIDE THE PATENT EXHAUSTION DOCTRINE

Patent exhaustion has no application to petitioner's conduct for a second, independent reason. Respondents' patent rights in the seeds that petitioner purchased were preserved because they were sold under a limited license that withheld any right to plant the harvested soybeans from any subsequent purchaser. JA27a. The price of the licensed sale, moreover, reflected the limited scope of the rights acquired, Resp. Br. 31-32, allowing growers to affordably obtain the technology to produce one commercial crop, without compensating respondent for the full value of its patented right to make future generations of the seed. That limited use-restriction, moreover, applied to third-party purchasers like petitioner who had no capacity to buy rights that respondents never conveyed.

Such restrictions are vital in the biotechnology industry, especially where the nature of a product's use renders it susceptible to readily making subsequent generations of the patented technology. For example, for inventions embodied in bacterial cells, the commercial product is often sold (and appropriately priced) for "research use only." Uses as research tools for further discovery have a very different value from uses in applied markets like medical diagnostics. Therefore field-of-use restrictions can foster arrangements by which purchasers can economically obtain the desired use of valuable technologies without jeopardizing the patent holder's exclusive right to control the making (and marketing) of the product for other, high-value commercial applications. That cooperative innovation by multiple actors is what allows valuable technology to be developed into useful products.

This Court has long recognized that a patentee may impose such reasonable restrictions as long as they fall fairly within the scope of the patent right, and the purchaser of the invention receives the full benefit of his or her bargain and obtains the "apparent object of [the] sale[]." *Quanta*, 553 U.S. at 632. Hewing to that precedent is of acute importance to biotechnological development.

A. Patent Exhaustion Does Not Apply To Reasonable And Limited Use Restrictions.

From its inception, patent exhaustion applied only to "a single *unconditional* sale" of a patented product. *Motion Picture Patents*, 243 U.S. at 516 (emphasis added). The sale had to be "absolute, and

without any conditions," *Mitchell*, 83 U.S. at 548, because a sale only exhausts the patent rights actually sold in a particular item. Conditions on the ability to sell a patented product, moreover, may be enforced even against downstream purchasers that are unaware of the conditions. *Mitchell*, 83 U.S. at 550. "[N]o one can convey in such a case any better title than he owns." *Id.* *General Talking Pictures Corp. v. Western Elec. Co.*, 304 U.S. 175, 181 (1938). (A purchaser who obtains only certain rights "could not convey *** what *** it was not authorized to sell."

That principle accords with the longstanding recognition that patent rights are divisible, and enforcing such restrictions is a means that is "normally and reasonably adapted to secure pecuniary reward for the patentee's monopoly" in all of its divisible aspects. *United States v. General Elec. Co.*, 272 U.S. 476, 490 (1926).

Similarly, product sales that are subject to single-use restrictions—like the single-season restrictions on respondents' patented seeds—do not exhaust the patentee's right to prevent the product from being used to make new, patented products outside the authorization. In *American Cotton-Tie*, the patented cotton ties were subject to a single-use restriction and were cut when the cotton bales reached the mill. 106 U.S. at 91. The Court upheld the patentee's right to exclude downstream

purchasers from using the buckle of the cut cotton-tie to construct a new product. *Id.* at 93-94.[12]

For those reasons, patent law permits respondents to commercialize their invention subject to certain use rights—planting a single, commercial crop—while not empowering the purchaser to destroy the value of the patent by also making unlimited generations of new seeds fully embodying the patent. *See Mitchell*, 83 U.S. at 548 (Purchasers of exclusive privileges under the Patent Act "hold the whole or a portion of the franchise which the patent secures, depending upon the nature of the conveyance."); *Keeler*, 157 U.S. at 663 (reaffirming *Mitchell v. Hawley*).

To be sure, there are important limitations on such use conditions, but none applies here.

First, the condition must preserve and enforce a legitimate component of the patent; the patentee cannot "extend the scope of its patent monopoly." *Motion Picture Patents*, 243 U.S. at 516. Thus, if the patentee wields the patent right as a means of conjoining purchasers in anticompetitive behavior, like resale price restrictions, the conditions will be invalidated. *See Univis*, 316 U.S. at 250 ("[T]he patentee cannot control the resale price of patented articles which he has sold, either by resort to an infringement suit, or, consistently with the Sherman Act *** by stipulating for price maintenance by his

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[12] Transfers to licensees, moreover, generally are not subject to patent exhaustion. *See General Elec.*, 272 U.S. at 489-490; *E. Bement & Sons v. National Harrow Co.*, 186 U.S. 70, 93 (1902).

vendees."); *Boston Store of Chicago v. American Graphophone Co.*, 246 U.S. 8, 25 (1918) ("alleged price-fixing contract disclosed in the certificate was contrary to the general law and *** was not within the monopoly conferred by the patent law"); *Straus v. Victor Talking Mach. Co.*, 243 U.S. 490, 500-501 (1917) (attempt to regulate the future price of the patented phonograph outside patent monopoly); *Bauer*, 229 U.S. at 16-17 ("[T]here is no grant of a privilege" in the patent law "to keep up prices and prevent competition by notices restricting the price at which the article may be resold.").

Similarly, patent exhaustion precludes anticompetitive tying arrangements that unreasonably require the purchaser to use the patent with non-patented products because those conditions "have nothing to do with the invention which is patented." *Motion Picture Patents*, 243 U.S. at 512-513; *see Leitch Mfg. Co. v. Barber Co.*, 302 U.S. 458, 461-463 (1938) (patent holder cannot forbid use of competitors' inputs). Such an illegitimate attempt to impede competition was also implicated in *Quanta*, where Intel attempted (unsuccessfully) to prohibit subsequent purchasers of the components from combining them with anything other than Intel products. 553 U.S. at 624.

In each scenario, restrictions the patentee imposed on the purchaser's use of the product sought to enforce requirements that "derive[d] no support from the patent." *Univis*, 316 U.S. at 251. Respondents' prohibition here on the making of subsequent generations of seed, however, properly preserved the recognized right of a patentee to

prohibit the re-creation of its product while licensing its use.

Second, use restrictions cannot deprive the purchaser of all reasonable use of the product. The "authorized sale of an article which is capable of use only in practicing the patent is a relinquishment of the patent monopoly with respect to the article sold.'" *Quanta*, 553 U.S. at 631 (quoting *Univis*, 316 U.S. at 249). "The lens blanks in *Univis* met this standard because they were 'without utility until [they were] ground and polished as the finished lens of the patent.'" *Id.* at 631-632 (quoting *Univis*, 316 at 249). As in *Univis*, the patent holder in *Quanta* had "suggested *no reasonable use*" other than an infringing use, and the Court could not "discern one." *Id.* at 632 (emphasis added). To prohibit a sale of something for its only reasonable use, of course, would deprive the purchaser any meaningful ability to use what it bought, *id.* at 631-632, and thus the sale would exhaust *no* rights in the patentee.

But this Court has never held that a restriction on purchasers that is necessary to secure "'the reward which the patentee by the grant of the patent is entitled to secure,'" *General Talking Pictures*, 305 U.S. at 127, is subject to patent exhaustion. That is because such restrictions do not seek to extend a patentee's authority beyond its ordinary scope or to amass rights and privileges that are not within the four corners of the patent right.

Rather, restrictions like those often imposed in the biotechnology area are archetypically legitimate exercises of the patent monopoly. They seek only to reserve for the patentee the right to control making

that the law has already granted, by imposing, for example, reasonable field-of-use restrictions to ensure a fair reward for inventions that require years of research, development, and investment while providing the purchaser the benefit of the bargain. The patent exhaustion doctrine was designed to police the efforts of patentees to expand their rights *beyond* what patent law grants them, not to hamstring legitimate efforts to enforce rights within the scope of patent protection. See *Boston Store*, 246 U.S. at 25 (patent law should not "deprive[] an inventor of any right coming within the patent monopoly"); *id.* at 26 (cases invalidating restrictions "alone concerned whether the monopoly of the patent law can be extended beyond the scope of that law ").

B. Calibrated Restrictions That Permit Reasonable Use Are Vital To Innovation

Petitioner's position would require this Court to adopt a categorical hostility to use conditions that not only contradicts this Court's decisions in *Mitchell* and *American Cotton-Tie*, but more fundamentally overlooks that not all conditions imposed by patentees are created equal. Of course over-reaching conditions that tread onto anti-competitive ground or deprive the purchaser of the only practical use of the item bought should not be permitted.

This case, however, is the polar opposite of a use restriction that impairs the purchaser's proper enjoyment of the product. All that respondents' restriction does is prohibit the one and only use that is aimed not at using the soybean *qua* soybean, but rather at arrogating to petitioner's control the

patented technology within that bean itself—the making of a new glyphosate-resistant soybean. Respondents' effort to protect against that unpaid-for, non-consensual appropriation of its core innovation sits at the very heart of patent law's traditional protection. And petitioner's effort to categorically prohibit such restrictions seeks to collapse the distinction between legitimate uses and illegitimate making in a way that will imperil innovation in many areas.

Indeed, in some of the most important areas of technological development in this Country—especially biotechnology—modern innovations can be susceptible to ready replication, making strong patent protections and reasonable licensing restrictions their lifeblood. In particular, the sale of many biotechnology products—whether genetically altered seeds, cell lines, nucleic acid preparations fermentation products, or live vaccines—inherently conveys not only the article itself, but also the means to readily reproduce the article. Accordingly, if a biotechnology patent holder cannot limit its licensee's or purchaser's use of the item either to prohibit replication or to contain the product to a specified field of use (like research rather than commercial exploitation), then every license and every sale becomes a de facto authorization to appropriate the inventor's right to make the invention and compete directly with him or her.

Petitioner's approach, moreover, would destroy all economic incentive to innovate. If the licensing of one seed or one DNA molecule necessarily conveys the means to readily produce countless replicas

without bearing any of the expense of invention, then the price the inventor would have to charge to capture the full value of the invention in that first-and-only sale or license would be prohibitively expensive. *See* Resp. Br. 34-35 & n.21 (value of license is "trivial" in comparison to full value of a never-ending supply of seed).

Furthermore, many new products commonly require lengthy and resource-intensive development periods involving multiple participants. Congress, in the context of federally funded research, has written into federal law the importance of clear patent rights reinforced by strong licensing mechanisms in fostering such collaborative research and development, *see generally* 35 U.S.C. §§ 200 *et seq.*, so that intellectual property can be licensed in a manner "that maximizes the potential for broad distribution ***," Final Notice for Obtaining and Disseminating Biomedical Research Resources for NIH Research Grant and Contract Recipients, 64 Fed. Reg. 72090, 72091 (Dec. 23, 1999). Field-of-use restrictions, which are common in the biotechnology sector, facilitate collaboration between prime innovators and others. And they permit patent holders to charge reasonable fees each time downstream users use the invention in an authorized way, without running the risk of unlimited reproduction by third parties and the attendant loss of the underlying patent right.

At the same time, preserving the strength of patent protections is indispensable for the biotechnology industry to attract venture capital," which "enables not-yet-profitable companies to sustain *** innovation through massive investments

in research and development." *FTC Report*, Ch. 3, p. 18. Such mutually beneficial arrangements provide the licensee the exclusive rights needed to attract capital for research and development, while providing the university or biotechnology company that engaged in the original research with revenue needed to support their innovation. Meir Perez Pugatch, *et al.*, TAKING STOCK: HOW GLOBAL BIOTECHNOLOGY BENEFITS FROM INTELLECTUAL PROPERTY RIGHTS 35 (2012). The number of such collaborations in the biotechnology industry has steadily increased over the last two decades. *Id.* at 40.

Moreover, due to the speculative nature of early-stage biotechnology, initial licensing fees generally have to be low. It is only over time that further research and development in this symbiotic, cooperative process can add significant value to the patented technology. Thus, early-stage licensing fees not only do not, but cannot, capture the full value of a fully developed commercialized product, which can be realized only over the course of extended research and development into potential applications and final uses for drugs, diagnostics, biological organisms, and agricultural products.

To illustrate, an inventor might first develop a standardized cell-culture system that allows for the reliable production of a new protein, together with a novel antibody that binds to the protein and allows for its detection and quantification. Because such standardized technology is useful for research, the biotechnology company may make the cell-culture system widely available at low cost, but only for research applications through a field-of-use

limitation, thereby fostering dissemination of the technology while creating a small revenue stream to support further development efforts. If the technology becomes more widely adopted and scientifically validated, specialized biotechnology companies might join the research and development process, subject to bargained-for conditions that reflect the value of the licensed technology for the specific use (*e.g.*, research or diagnostic) to which they will put the product. Should useful applications be further identified, larger companies with greater resources would enter the process to shoulder, at much greater cost, the scientific and regulatory burden of developing a new therapeutic product.

This synergetic relationship between a multitude of basic and applied research entities, large and small, with varying skill sets and resources, is crucial to ensuring the continued productivity of the biotechnology industry and maximizing the potential uses of an initial breakthrough. Strong patent rights, including reasonable use restrictions, underpin the effective functioning of this chain of cooperative innovation by allowing relative returns on investment to be fairly bargained for and distributed appropriately according to each player's relative contribution along the path from an initial breakthrough to its final marketable applications.

End users of biological products—including patients hoping for a cure, local governments looking for a cost-effective way to clean up a polluted river, or farmers seeking to grow drought-resistant crops in semi-arid zones—also critically depend upon the

strong enforceability of reasonable licensing and use restrictions, which assure that prices are contained and research can continue. The incentive to invest in innovation and research would be imperiled if the patent term for a vaccine was reduced from 20 years to the first sale of a single, readily replicated vial. Nothing in this Court's patent exhaustion precedent requires that patent-eviscerating and innovation-stultifying result.

C. Contract Law Offers Insufficient Protection

Contrary to petitioner's argument, (Pet. Br. 55-57), the 50 States' variable and disuniform contract laws are incapable of adequately protecting an inventor against the multiplied replication of a biological product.

First, requiring the large number of individualized, elaborate licensing agreements that petitioner favors for every single sale of a cell line, DNA, bacteria, or gene sequence is economically infeasible. The early stage of research and development for biological products often involves university researchers and small biotechnology companies. Those entities have neither the expertise nor the leverage to negotiate individual, detailed contracts for every $100 vial of cells or bacteria sold, much less the ability to calculate the appropriate pricing when the full value of the original innovation has yet to be established.

Furthermore, a patented product can have multiple functional uses—such as crop production versus seed manufacturing, or early-identified

research uses versus high-value therapeutic or diagnostic uses—that emerge only after years of research. Medical and scientific breakthroughs are predicated on a patent law system that ensures the inventor's reward through lengthy and expensive cooperative research processes that early contractual terms simply cannot capture.

Nor can the market price adjust to reflect the additional rights that purchasers acquire and patentees lose. To begin with, the amount of cells or seeds needed for replication purposes is small, and it may take only one unrestricted purchase of a handful of seeds or a single cell line to unravel completely the patentee's rights. As a result, the patentee's entire compensation—the single royalty that the patent exhaustion doctrine promises, see *Univis*, 316 U.S. at 251; *Bloomer v. Millinger*, 68 U.S. (1 Wall.) 340, 350 (1863)—would have to be captured in the first sale of a vial of cells, a sample of recombinant DNA, or a packet of seeds. But that cost would be so exorbitant that few if any researchers or farmers could afford the product.

Beyond that, the public interest would be better served by a patent system that permits biotechnology research decisions to be made based not upon the highest bid, but upon which entity has the best capacity to investigate and develop a particular product and to promote scientific advancement.

Second, as this case well illustrates, contract law cannot effectively protect the patentee when a third party acquires a copy of a biological product and uses that copy as the genesis for continuous, unlimited production. That is because that third

party may not be in privity of contract with the patentee (or a licensee), making it next to impossible to enforce any contractual restrictions. And when the patented product contains within itself the capacity for ready replication, the patentee has no realistic capacity to enter into a contractual agreement with every party that could potentially make new copies of the technology.

In addition, privity may be broken deliberately by the sale and repurchase of a subsequent generation of a patented biological product. A licensee, for example, could sell his commercial crop of seeds to a grain elevator, an intermediary (like petitioner) could use the seed to undertake the very planting prohibited by the license, and then the farmer could purchase that newly made seed containing the patented technology from the intermediary. Thus, it would take only one $100 cell line diverted from research use or one farmer commercially exploiting second-generation seed to prove, that an "article can be unfettered from the claim of his monopoly without paying its tribute." *Keeler*, 157 U.S. at 666-667. [13] Moreover, as the product continuously replicates and penetrates the market, the value of the product declines, taking with it the scope of damages the patentee can recover.

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[13] *See* Pet. App. 179a (district court inquires: "[D]oes [petitioner] contend that he could simply take his Roundup Ready® crop to a grain elevator, sell it, and then buy some of it right back that same day without violating the Monsanto patents?").

Third, consigning patentees, particularly small biotech companies, to the vagaries of 50 States' contract laws will deny innovators the stability and consistency that the federal government itself has acknowledged is critical to the industry's survival and continued growth. *FTC Report* at Ch. 3, p. 29. That would undermine the "fundamental purpose" behind the Patent Clause of the Constitution, which "was to promote national uniformity in the realm of intellectual property." *Bonito Boats*, 489 U.S. at 162 (citing 43 THE FEDERALIST 309 (B. Wright ed. 1961)). And those uncertainties, in turn, would deprive early-stage technologies of the ability to attract the necessary investment for further development.

Fourth, contract law cannot adequately remediate the harm to the patentee arising from the release of the biological product to make unlimited new copies. Free use of only one patented product to make a potentially unlimited supply of new products is the equivalent of a complete loss of control of the patent right, making it all but impossible to determine an adequate damages amount. Patent law provides for injunctive relief precisely because of the "difficulty of protecting a right to exclude through monetary remedies that allow an infringer to use an invention against the patentee's wishes." *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 395 (2006) (Roberts, C.J., concurring). The remedies afforded by contract law, however, generally do not include enjoining the unauthorized purchaser or user from distributing a replicable product or combining it with other products.

In short, the profound advances that the biotechnology industry has given the American public in the last two decades, not to mention billions of dollars in current and ongoing capital investment decisions, rest critically upon stable and vigorous patent law protections. It is the patent law's distinctive ability to reach third parties, to enforce uniform protections, to preserve the exclusive right to make a patented product, and to allow reasonable use conditions that has established a safe and predictable legal environment for biotechnology innovation. The patent exhaustion doctrine was designed to protect against patentees who overreach the proper boundaries of patent law, not to unravel the fundamental protections that have proven critical to modern innovation and that have played a singularly important role in the development of new medicines, diagnostics, research tools, and agricultural products.

CONCLUSION

For the foregoing reasons, the judgment of the court of appeals should be affirmed.

Respectfully submitted.

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January 23, 2013

AMICUS CURIAE BRIEF

No. 11-796

In the Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, ET AL.,

Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF OF BSA | THE SOFTWARE ALLIANCE AS *AMICUS CURIAE* IN SUPPORT OF RESPONDENTS

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BRIEF OF BSA | THE SOFTWARE ALLIANCE AS *AMICUS CURIAE* IN SUPPORT OF RESPONDENTS

INTERESTS OF THE *AMICUS CURIAE*

BSA | The Software Alliance is an association of the world's leading software and hardware technology companies. On behalf of its members, BSA promotes policies that foster innovation, growth, and a competitive marketplace for commercial software and related technologies. BSA members pursue patent protection for their intellectual property and as a group hold a significant number of patents. They also manufacture several creative products that are frequently subject to unjustified patent infringement claims. Because patent policy is vitally important to promoting the innovation that has kept the United States at the forefront of software and hardware development, BSA members have a strong stake in the proper functioning of the U.S. patent system.[1]

The members of the BSA include Adobe, Apple, Autodesk, AVEVA, AVG, Bentley Systems, CA Technologies, CNC/Mastercam, Dell, IBM, Intel, McAfee, Microsoft, Minitab, Oracle, Parametric Technology Corporation, Progress Software, Quest Software, Rosetta Stone, Siemens PLM, Symantec, TechSmith, and The MathWorks.

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[1] Pursuant to Rule 37.6, *amicus* affirms that no counsel for a party authored this brief in whole or in part and that no person other than *amicus* and its counsel made a monetary contribution to its preparation or submission. The parties' letters consenting to the filing of this brief have been filed with the Clerk's office.

SUMMARY OF ARGUMENT

Although the patent law issues in this case arise in the context of agricultural seeds, this Court's resolution of those issues could have a significant effect on other parts of the economy, particularly technology companies:

- Computer software, whose use often involves the creation of temporary additional copies of the software program, could be characterized as "self-replicating," although software programs obviously differ in critical ways from agricultural seeds. A legal rule eliminating patent protection for "self-replicating" seeds that had the same result with respect to temporary copies of software programs would facilitate software piracy on a broad scale.
- As this Court's decision in *Quanta Computer, Inc.* v. *LG Electronics, Inc.*, 553 U.S. 617 (2008), recognized, a "conditional sales doctrine" that broadly allowed patent owners to invoke infringement remedies against downstream purchasers, notwithstanding a prior authorized sale of the article embodying the patent, would harm innovation by imposing significant burdens on product creators and consumers.

A vibrant technology sector is vital to the U.S. economy. Computer hardware and software creators drive exports, produce substantial private investment in research and development, and provide millions of high-paying American jobs.

Properly balanced patent protection is critical to the continued growth of this industry. Computer hardware and software companies are among the

Nation's leading innovators, obtaining many high-quality patents that protect their valuable intellectual property. At the same time, these companies are frequently subject to abusive patent litigation, because it often can be easy to assert a patent infringement claim that—regardless of its merits—will be enormously expensive to defend. For these reasons, the technology industry is uniquely situated in recognizing the need for calibrated patent laws that reward innovation but do not unduly restrict those who make and consume technology products.

With respect to the first issue posed by the parties, the Federal Circuit properly held that petitioner's planting of second-generation seeds constitutes patent infringement. Patent exhaustion turns on whether the particular item embodying the patent was subject to a sale authorized by the patentee. Here, there is no dispute that the second-generation seeds were not the subject of an authorized sale. Petitioner's effort to apply an expanded version of the exhaustion doctrine to "self-replicating" items both lacks any foundation in patent exhaustion cases and threatens to eviscerate all patent protection for these items.

To the extent that the Court reaches a contrary conclusion, it should do so based on the particular self-replicating nature of seeds and confine any such expanded exhaustion rule to the factual context before the Court. The circumstances surrounding other technologies, like computer software, are fundamentally different from agricultural seeds. This is therefore a situation in which the Court should decide the matter "narrowly" "[r]ather than adopt[] [a] categorical rule[] that might have wide-ranging and unfore-

seen impacts." *Bilski* v. *Kappos*, 130 S. Ct. 3218, 3229 (2010).

With respect to the second legal issue addressed by the parties, the "conditional sale doctrine," the Court should reject respondents' invitation to eliminate the strict limitations recognized in the recent unanimous decision in *Quanta Computer*. There, the Court concluded that once a product undergoes an authorized first sale, the patent holder may not enforce additional, patent-based limitations with respect to that item. Any exception to this rule should be limited to the particular situation presented here, in which the condition attaches only to copies of the article embodying the patent that were not themselves subject to an authorized sale.

ARGUMENT

I. Balanced Patent Protection Is Essential To Enable America's Technology Sector To Continue To Benefit The Nation's Economy.

The technology industry, which includes creators of both computer hardware and software, is a significant driver of the modern U.S. economy. It accounts for a substantial and growing portion of the national GDP, U.S. trade exports, and research and development spending, as well as millions of high-paying jobs.

Properly balanced patent protection is essential to the continued growth of this industry. Members of BSA, for example, obtain thousands of high-quality, valuable patents every year. At the same time, technology companies create complex hardware and software products, making them frequent victims of unjustified patent infringement claims. It is thus critical to the industry that patent law provides ap-

propriate incentives to innovators while also protecting manufacturers and consumers against unjustified claims of infringement.

A. A Vibrant Technology Sector Is Important To The Nation's Economy.

The technology industry is essential to the modern economy; it has, for example, played a critical role in the recovery from the recent recession. Thus, the Bureau of Economic Analysis estimates that the technology, information, and communications sector (which includes computer hardware and software) grew by 6.9% in 2011, which accounted for approximately 20% of total national GDP growth that year. Donald D. Kim *et al.*, U.S. Bureau of Economic Analysis, Annual Industry Accounts, Advance Statistics on GDP by Industry for 2011, at 16-17 tbls. 3 & 3A (May 2012), http://tinyurl.com/ab46ywj. And in 2010, the industry grew by 14.7%, which again accounted for roughly 20% of total economic growth. *Ibid.*

Moreover, U.S. technology companies are among the nation's leading exporters of products, significantly strengthening the U.S. economy. Between January and November 2012, U.S. companies exported nearly $113 billion of computers and electronic products—about 8% of total U.S. exports. U.S. Census Bureau, U.S. International Trade in Goods and Services, FT-900 Supplement November 2012, at 1 Ex. 1 (2013), http://tinyurl.com/ytoeb2. And software products contribute approximately $36 billion in annual exports. See Robert W. Holleyman, BSA President and CEO, *Testimony before the United States House of Representatives Committee on Energy and Commerce, Subcommittee on Commerce, Manufacturing and Trade*, at 2 (Mar. 16, 2011), http://tiny.cc/p3nlow.

Investment in the technology industry reflects its critical importance to the American economy. In 2008, companies invested approximately $46.9 billion in research and development for software and computer-related services—approximately 16% of total industrial research and development expenditures for the Nation. Nat'l Sci. Bd., Science and Engineering Indicators, at 4-21 & 4-23 (2012), http://tinyurl.com/amb2uao. And companies invested about $45 billion in research for the computer and electronic products sector in 2008. *Ibid.* Together, hardware and software account for roughly 31% of total spending by businesses on research and development. *Ibid.* BSA member companies each year spend in excess of $32 billion on research and development to expand their innovation portfolios. See BSA, *Patent Reform: The Verdict Is In* 4 (2007), http://tinyurl.com/nraoaf.

Technology firms also are leading innovators. Between 2006 and 2008, 77% of companies engaged in software development "report[ed] the introduction of a new product or service compared to the 7% average for all nonmanufacturing industries." Nat'l Sci. Bd., *supra*, at 6-47. Computer manufacturers likewise far outstrip the national average for innovation, with over 50% of companies in the hardware market reporting the innovation of a new product or service. *Id.* at 6-47 fig. 6-37.

It therefore is not surprising that the information technology industry has been described as "the key factor responsible for reversing the 20-year productivity slow-down from the mid-1970s to the mid-1990s and in driving today's robust productivity growth." Robert D. Atkinson & Andrew S. McKay, *Digital Prosperity: Understanding the Economic Benefits of the Information Technology Revolution,* Info.

Tech. & Innovation Found., Mar. 2007, at 10, http://-tinyurl.com/yv5jnw.

The technology industry also contributes to the economy by creating a substantial number of high-paying American jobs. Currently, software companies and related services employ approximately 2 million U.S. workers, paying salaries that are roughly 195% of the national average. Testimony, *supra*, at 2. The Bureau of Labor Statistics predicts that the number of computer and mathematical scientists will increase by 25.6% between 2008 and 2018. Nat'l Sci. Bd., *supra*, at 3-13, tbl. 3-A. A vibrant technology industry is thus key to the continued growth of the American workforce.

B. Appropriate Patent Protection Is Critical To The Continued Growth Of The Technology Industry.

Patent protection provides a critical incentive for innovation by technology companies. Software firms, for example, patent their products in order to protect their ability to reap the benefits of their creative work. See Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 Cal. L. Rev. 1, 5 (2001). Indeed, as early as 1992, congressional reports recognized that "patent protection is of importance to the U.S. software industry, both domestically and in the global market." U.S. Congress, Office of Technology Assessment, *Finding a Balance: Computer Software, Intellectual Property and the Challenge of Technological Change*, at 23 (1992). As PTO Director David Kappos recently noted, because software is "a form of innovation that is increasingly critical to technological advancement," protecting software via patents is essential. David Kappos, Keynote Address at Center for Ameri-

can Progress, *An Examination of Software Patents* (Nov. 20, 2012), http://tiny.cc/33zfow.

Likewise, patents provide essential protection for computer hardware innovations. The PTO has calculated that computer technology is one of the most patent intensive industries. U.S. PTO, Intellectual Property and the U.S. Economy, Industries in Focus, at 8 tbl.1 (2012), http://tinyurl.com/bmc88vu.

Although technology companies rely on patents to protect their products, they also are frequently subject to opportunistic infringement suits. It is fundamental to technology that "computer hardware and software contain an incredibly large number of incremental innovations." Fed. Trade Comm'n, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy, Executive Summary*, at 6 (Oct. 2003) (FTC Report), http://tinyurl.com/6wk4p. See also Bronwyn H. Hall & Rosemarie Ham Ziedonis, *The Patent Paradox Revisited: An Empirical Study of Patenting in the U.S. Semiconductor Industry, 1979–1995*, 32 Rand J. Econ., No. 1, 101, 110 (2001) ("a given semiconductor product * * * will often embody hundreds if not thousands of 'potentially patentable' technologies").

Given the enormous number of patents in force and the hundreds of thousands granted every year (the PTO granted 224,505 patents in 2011 alone, see U.S. PTO, U.S. Patent Statistics Chart, http://tinyurl.com/33fd4rz), it takes little effort for a plaintiff to allege that a hardware or software product infringes a patent. This is compounded by the behavior of "non-practicing entities," the "industry [that] has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees." *eBay Inc.* v. *MercEx-*

change, L.L.C., 547 U.S. 388, 396 (2006) (Kennedy, J., concurring). One study reports that in 2011 NPEs sued 2,150 unique companies, forcing 5,842 separate defenses. James Bessen & Michael J. Meurer, *The Direct Cost from NPE Disputes*, Boston University School of Law Working Paper No. 12-34, at 4 (June 25, 2012), http://tinyurl.com/b7uhf8r.

Even meritless infringement claims can impose enormous costs. See Bessen & Meurer, *supra*, at 29 tbl. 2 (median cost of defending an NPE suit is $560,000, while the mean cost is $7,910,000). These costs create substantial incentives for a company to settle a claim rather than litigate, regardless of the actual merits of the suit. See Wesley M. Cohen et al., *Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or Not)*, Nat'l Bur. Econ. Research Working Paper No. 7552, at 27 (Feb. 2000), http://tinyrul.com/a9cqtrq; cf. *eBay Inc.*, 547 U.S. at 396 (Kennedy, J., concurring) (threat of injunction used as "bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent"); *Blue Chip Stamps* v. *Manor Drug Stores*, 421 U.S. 723, 740-743 (1975) (recognizing the risk of unjustified settlements).

In sum, patent protection is critical to the industry, but patent abuse stifles innovation. The rights of all stakeholders must be balanced appropriately. See *KSR Int'l Co.* v. *Teleflex Inc.*, 550 U.S. 398, 427 (2007) (if not properly calibrated, "patents might stifle, rather than promote, the progress of useful arts").

It is with this sense of balance that BSA approaches this case. The decision below is correct insofar as it applies traditional principles of patent ex-

haustion to conclude that the sale of the first-generation seed did not exhaust respondents' rights in the second-generation seeds at issue here. Affirmance is therefore warranted. But this Court should maintain the strict limits on the "conditional sale" doctrine in *Quanta*, in order to protect against significant adverse consequences for the technology industry.

II. The Federal Circuit Properly Concluded That Sale Of First Generation Seeds Does Not Exhaust A Patent Owner's Rights In Second Generation Seeds.

The Court should affirm the decision below because there was no patent-exhausting first sale of the second-generation seeds. Petitioner's use of those seeds in a manner that practices respondents' patents constitutes infringement. There is no exception to conventional patent exhaustion standards for technology that "self replicates." Holding otherwise would, as the court below found, eviscerate all meaningful patent protection for these items.

To the extent that the Court entertains petitioner's invitation to create a special, more expansive exhaustion rule for the sale of first-generation seeds, there is no basis for applying such a rule in other contexts. A decision resting on unique features of seeds should be narrowly confined to avoid creating uncertainty with respect to other, settled areas of patent law—such as computer software.

A. There Is No "Self-Replicating Technology" Exception To The Standards Governing Patent Exhaustion.

The "longstanding doctrine of patent exhaustion" provides that "the initial authorized sale of a pa-

tented item terminates all patent rights to that item." *Quanta*, 553 U.S. at 625. See also *United States* v. *Univis Lens Co.*, 316 U.S. 241, 251 (1942) ("the purpose of the patent law is fulfilled with respect to *any particular article* when the patentee has received his reward for the use of his invention *by the sale of the article*") (emphases added); *Adams* v. *Burke*, 84 U.S. (17 Wall.) 453, 456 (1873) (patent owner who sells a machine or instrument has "received all the royalty or consideration which he claims for the use of his invention *in that particular machine or instrument*") (emphasis added). An authorized sale of seeds therefore would exhaust the patent rights *in the particular seeds that were sold*.

But the question here involves second-generation seeds that were ***not*** the subject of an authorized sale. As the court of appeals correctly concluded, "once a grower, like [petitioner], plants the commodity seeds that contain Monsanto's Roundup Ready® technology and the next generation of seed develops, the grower has created a newly infringing article." Pet. App. 14a.

Petitioner cannot persuasively argue that he did not "make" the next generation of seeds. Cf. Pet. Br. 37-42. Certainly there is no reason that one action cannot simultaneously "use" a patented good and "mak[e]" another patented article.

Similarly, petitioner is wrong in contending (Br. 35) that, because the self-replication of the first-generation seeds is a consequence of their normal use, petitioner may use the *second-generation* seeds, based on an analogy to this Court's determination in *Quanta* that the authorized sale of a product exhausts a patent when the "only reasonable and intended use" of the article sold "was to practice the

patent." 553 U.S. at 631. To begin with, the question in *Quanta* involved the use of an article acquired through an authorized sale; here, the question relates to a new copy of the patented article.

Moreover, the court below correctly concluded that there were uses of second-generation seed (soybeans) *other* than practicing the patent—namely that they may be used as a commodity for feed or food. Pet. App. 14a. See also *Asgrow Seed Co.* v. *Winterboer*, 513 U.S. 179, 188 (1995) ("Farmers generally grow crops to sell."). There simply is no argument that planting is the "only reasonable and intended use" of the second-generation seed copies resulting from the planting of the first-generation seeds.

The repair and reconstruction doctrine confirms the correctness of this analysis. It is well established that one who owns a patented article may repair it, but not reconstruct it. A "true reconstruction" that results in the making of "a new article" constitutes patent infringement. *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 365 U.S. 336, 346 (1961). See also *Jazz Photo Corp.* v. *Int'l Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001) ("the ownership of a patented article does not include the right to make a substantially new article"). Thus a "prohibited reconstruction occur[s]" (*Jazz Photo*, 264 F.3d at 1104-1105) when "a new article" is made after the patented article, "viewed as a whole, has become spent." *Aro Mfg.*, 365 U.S. at 346.

When planted, the initial generation of seeds has—in the words of *Aro Mfg.*—"become spent." Likewise, the second-generation seeds qualify as a wholly "new article." Because the second-generation seeds were not the subject of an authorized sale, petitioner's use of those seeds constitutes infringement.

B. Any Exception To Conventional Exhaustion Standards For Self-Replicating Seeds Should Not Extend To Other Contexts, Such As Computer Software.

To the extent the Court concludes, contrary to our submission, that conventional exhaustion standards do not apply to self-replicating seeds—and that an authorized sale of first-generation seeds exhausts the patent owner's rights with respect to all seeds resulting from the planting of the first-generation seeds—that holding should be confined to the particular factual context presented here. As the Court has recognized in analogous circumstances, it is important to decide the issue presented in this case "narrowly" "[r]ather than adopt[] [a] categorical rule[] that might have wide-ranging and unforeseen impacts." *Bilski*, 130 S. Ct. at 3229.

Petitioner's argument rests largely on the particular features of soybean seeds. Thus, he emphasizes that the self-replication of the seeds is a "natural occurrence." Pet. Br. 42. And he argues that when he purchased commodity seeds from a grain elevator, he had no notice that they contained respondents' patented features. *Id.* at 50-51.

The use of computer software typically results in creation of a temporary additional copy (or copies) of some or all of the software program in the computer's short-term memory. *Vernor* v. *Autodesk, Inc.*, 621 F.3d 1102, 1109 (9th Cir. 2010) ("In order to use a software program, a user's computer will automatically copy the software into the computer's random access memory."), cert. denied, 132 S. Ct. 105 (2011); see also 17 U.S.C. § 117(a). Although the creation of such copies could in some very general sense be la-

beled "self-replication," the relevant factual context is light years away from that of soybean seeds.

To begin with, the creation of the temporary copies is not a "natural" phenomenon. Rather it is a result of the interaction between the software and the computer being used.

Moreover, petitioner asserts that use of seeds to produce more seeds is their only reasonable use. We have explained, however, that the same is not true of the second-generation seeds, which may be sold as feed.

In the software context, the argument regarding uses other than self-replication is dramatically stronger than it is for seeds. The intended and only reasonable use of the temporary software copies is to facilitate the operation of the "first-generation" software program. Whatever the merits of petitioner's argument with respect to seeds, temporary software copies plainly have as the principal purpose something other than self-replication—making the software program function. Their purpose obviously is ***not*** self-replication.

Finally, because a software user virtually always acquires the legal right to use the software through a license, not an authorized sale, questions regarding possible infringement as a result of creation of temporary copies are addressed in the software license, which invariably authorizes the creation and use of such copies in connection with the licensee's use of the licensed software.

Indeed, Congress has addressed this precise issue in the context of the copyright law, enacting a statute providing that it is not copyright infringement if "a new copy or adaptation is created as an

essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner." 17 U.S.C. § 117(a). By protecting an authorized user of software against copyright infringement liability in this strictly limited situation—provided that the "new copy" is "used in no other manner"—Congress precluded any argument that rights in the temporary copies are exhausted for all purposes. The same result should apply under the patent law.

As the government explains in its merits-stage amicus brief (at 17), Congress's adoption of this provision "would have been unnecessary if the copyright exhaustion doctrine * * * already provided such a defense." And Congress's express decision to provide only a limited exception to copyright infringement liability precludes a revision of the patent exhaustion doctrine to eliminate all of a patent owner's rights in temporary software copies.[2]

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[2] For the reasons just discussed, the American Antitrust Institute (AAI) is wrong in asserting (at 15) that affirming the decision below would mean that "disks containing software seemingly would be incapable of use without also violating the patent holder's right to 'make' the patented software." The software license will address that issue, making clear that the creation and use of temporary copies in connection with the use of the licensed software does not constitute infringement—otherwise the licensee would not be able to use the software that he or she had licensed. If a license did not include such terms, a court might find that in the narrow and targeted statutory limitation of copyright infringement liability the basis for a similarly narrow and targeted limitation of patent infringement liability. But certainly there would be no basis whatever for a broader limitation of patent rights.

A contrary result (*i.e.*, application of petitioner's theory for seeds to the context of software) would open the door to massive software piracy. Piracy already constitutes a substantial scourge on the economy—costing an estimated $63.4 billion in 2011 alone. BSA, *Shadow Market, 2011 BSA Global Piracy Study*, at *1 (9th ed. 2012). It would be intolerable for a construction of the Patent Act that would have the predictable effect of enabling grossly more piracy.

There is no basis to work a fundamental change to the rights of software manufacturers in the course of resolving a case about soybean seeds. Any creation of a specific rule for seeds due to their natural ability to "self-replicate" should be confined narrowly to the unique characteristics of those products.

III. The Court Should Reaffirm *Quanta*'s Strict Limits On The Conditional Sale Doctrine.

The court of appeals did not rely on the conditional sale doctrine in upholding respondents' claim

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Moreover, Congress's actions in the copyright context demonstrate that it can and will intervene if judicial decisions threaten to render software unusable. An example proves the point. When the court in *MAI Systems Corp.* v. *Peak Computer, Inc.*, 991 F.2d 511 (9th Cir. 1993), held that a service provider engaged by a software licensee lacked authority to make the temporary software copies necessary to operate a computer program, and therefore could not provide repair and maintenance services, Congress enacted a new exemption from liability, in Section 117(c), for copies made solely for the purpose of maintenance and repair when the copying is authorized by the "owner or lessee of a machine." See H.R. Rep. No. 551, 105th Cong., 2d Sess. 27 (1998). There accordingly is no need for this Court to adopt unjustified restrictions on patent rights based on AAI's imagined, but entirely unsubstantiated, threats to the usability of software programs.

that the patent rights in the second-generation seeds were not exhausted. But respondents did invoke that doctrine in the court below, arguing that "licensed growers' sales of second-generation seeds to grain elevators as commodity seeds did not exhaust Monsanto's patent rights in those seeds because of the express condition in the Technology Agreement that the progeny of licensed seed never be sold for planting." Pet. App. 11a-12a (alterations & quotation omitted).

And the Federal Circuit did favorably cite its prior decisions in *Monsanto Co.* v. *Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006), and *Monsanto Co.* v. *McFarling*, 302 F.3d 1291 (Fed. Cir. 2002)—both of which applied (prior to this Court's ruling in *Quanta*) a conditional sale theory. See *Scruggs*, 459 F.3d at 1336 ("The doctrine of patent exhaustion is inapplicable in this case. There was no unrestricted sale because the use of the seeds by seed growers was conditioned on obtaining a license from Monsanto."); *McFarling*, 302 F.3d at 1298-1299 ("The restrictions in the Technology Agreement are within the scope of the patent grant.").

In this Court, respondents place primary reliance on the inherent limitations of the patent exhaustion doctrine discussed above. But they advance as an alternative argument the claim that—even assuming that petitioner obtained the first-generation seeds pursuant to an authorized sale—petitioner's use of the second-generation seeds in violation of the technology agreement's prohibition on the planting of second-generation seeds constituted patent infringement. Resp. Br. 33-51.

The Court should reject respondents' invitation to abandon the Court's unanimous holding in *Quan-*

ta. To the extent the Court is inclined to permit a conditional sale in this context, it should do so only on the basis of the unique facts presented here—permitting invocation of patent remedies with respect to an article that was not itself the subject of an authorized sale.

As a threshold matter, it is important to emphasize that a sale of the article in question is a critical predicate for both petitioner's argument against the enforceability of any conditions on sales and for respondents' argument that such conditions may be enforced in certain situations. Where there is no sale, and the patent owner instead licenses the use of a product, the patent owner has broad freedom to limit the scope of the license, and a sale or use in violation of the license terms, whether by the licensee or by a third party purporting to have obtained rights from the licensee, is actionable as patent infringement. See Resp. Br. 34-37, 46-47, 50; Pet. Br. 26-29; *Vernor*, 621 F.3d 1102 (applying that rule in the context of software licensing transactions).

The question here involves only whether the patent owner may impose such restrictions, and enforce them via the patent law, when title to the article is transferred pursuant to an authorized sale. That is because the basis for limiting the patent owner's ability to impose post-sale conditions enforceable under the patent law is the exhaustion doctrine, and that doctrine applies only where there has been an authorized sale. "[W]hen the patentee * * * sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use." *Adams*, 84 U.S. (17 Wall.) at 456. See also *Quanta*, 553 U.S. at 635-

636 ("Exhaustion is triggered only by a sale authorized by the patent holder.").

The scope of respondents' argument is not completely clear. Respondents contend that the Court's decisions "do not establish [a] *per se* rule against enforcing reasonable conditions following a sale," at least if that condition is included in the license agreement with the article's manufacturer. Resp. Br. 37, 43-44. Later in their argument, however, respondents advance a much narrower argument, contending that practical considerations preclude the use of a license, and require a sale—because the seeds are consumed upon their use and can be produced only through propagation and cross-breeding—and that those considerations provide the justification for finding an exemption to the exhaustion rule that ordinarily applies once an article is sold. Resp. Br. 46-47.

Both of these contentions run headlong into this Court's recent decision in *Quanta*.

The *Quanta* Court began its analysis by stating that "[t]he longstanding doctrine of patent exhaustion provides that the initial authorized sale of a patented item terminates all patent rights to that item." 553 U.S. at 625. See also *id.* at 628 ("the traditional bar on patent restrictions following sale of an item applies when the item sufficiently embodies the patent—even if it does not completely practice the patent—such that its only and intended use is to be finished under the terms of the patent").

The Court first held that this fundamental principle applies to method patents: "methods * * * may be 'embodied' in a product, the sale of which exhausts patent rights." *Quanta*, 553 U.S. at 628. See

also *id.* at 629-630 ("Patentees seeking to avoid patent exhaustion could simply draft their patent claims to describe a method rather than an apparatus. * * * By characterizing their claims as method instead of apparatus claims, or including a method claim for the machine's patented method of performing its task, a patent drafter could shield practically any patented item from exhaustion.").

Next, the Court addressed whether the items that were the subject of the authorized sale—certain microprocessors produced by Intel pursuant to a license from the patentee, LGE—sufficiently embodied LGE's patent rights to trigger exhaustion. Finding that the Intel products' "only reasonable and intended use was to practice the patent" and "they 'embodie[d] essential features of [the] patented invention,'" the Court concluded that the governing standard was satisfied. *Quanta*, 553 U.S. at 631.

Finally, the Court determined that the sale by Intel was authorized, pointing out that "[n]othing in the License Agreement restricts Intel's right to sell its microprocessors and chipsets to" businesses such as Quanta, and that although the license required Intel to give its customers a notice stating that LGE had not licensed those customers to practice its patents, "Intel's authority to sell its products embodying the LGE Patents was not conditioned on the notice or on Quanta's decision to abide by LGE's directions in that notice." *Quanta*, 553 U.S. at 636-637.

Respondents' broadest argument—that there is no *per se* rule against enforcement of post-sale conditions—is simply wrong. *Quanta* expressly recognized just such a *per se* rule: that "the initial authorized sale of a patented item terminates all patent rights to that item." 553 U.S. at 625.

Next, respondents contend that the sale exhaustion doctrine can be circumvented by framing the condition as a limitation on the right to sell the article embodying the patent. Here, respondents point to the *Quanta* Court's determination that "[n]o conditions limited Intel's authority to sell products substantially embodying [the LGE] patents." 553 U.S. at 637. But that fact was irrelevant in determining whether Intel's sale to Quanta was an authorized sale. As long as the sale was authorized—the sale did not violate a limitation in the license agreement—the patent rights were exhausted.

Respondents advance a much broader argument here, claiming that a condition on the licensee's right to sell does not just limit the licensee, but also limits the patent rights of all downstream purchasers from that licensee so that violation of the condition constitutes patent infringement. Even if the sale is authorized, respondents contend that the purchaser remains subject to the condition included in the license agreement between the patent owner and the manufacturer.

Not surprisingly, respondents cite no authority for that expansive proposition. It would reduce the entire sale exhaustion doctrine to a default contract rule, easily avoided by proper drafting of a license agreement.

And it would open the door to all of the adverse consequences that the sale exhaustion doctrine was designed to prevent. By limiting the effect of patent exhaustion and thus controlling the downstream uses of a patented item, the patent owner would be able to assert a right to seek *additional* royalties from subsequent purchasers of the product.

"[A]ny downstream purchasers using or reselling the patented article would literally be infringers," and "the patentee would be able to collect royalties or damages from all of them." Yuichi Watanabe, *The Doctrine of Patent Exhaustion: The Impact of* Quanta Computer, Inc. *v.* LG Elecs., Inc., 14 Va. J.L. & Tech. 273 (2009). See also Shubha Ghosh, *Carte Blance,* Quanta, *and Competition Policy*, 34 J. Corp. L. 1209, 1224 (2009) ("Once it is recognized that a patent owner can condition a transfer of patented technology and that this condition prevents the exhaustion of the patent owner's rights, then the patent owner logically has the ability to bring patent infringement claims against anyone who obtains the technology from the first purchaser and violates the contractual condition.").

The consequences of this rule would be severe. Because of the enormous number of patents in force, it is impossible for a downstream purchaser to identify all patent licenses that could be implicated by any particular product. FTC Report, Ch. 2, *supra*, at 28. And license agreements between a patentee and a manufacturer are rarely public. It is thus inevitable that firms will spend substantial time and resources designing products that combine patented components without knowledge of underlying license agreements. This raises a substantial prospect that, if the licensee has purported to place a downstream limitation on a particular patented item, the licensee can bring an infringement action *after* these significant costs have been sunk. And "[i]f the patentee can catch downstream violators by surprise it will be in a position to extract much higher royalty rates than it could if the infringement notification were more timely." Herbert Hovenkamp, *Post-Sale Restraints &*

Competitive Harm: The First Sale Doctrine in Perspective, 66 N.Y.U. Ann. Surv. Am. L. 487, 517 (2011).

Taking the circumstances of *Quanta*, one commentator described the problem: "For example, computer assemblers selecting components from Intel without notice of the conditional sale from LG to Intel would make that choice on the premise that all IP rights necessary for the use of such products traveled with the sale." Hovenkamp, *supra*, at 517. "That would affect their decision to use Intel components rather than those of a rival. However, they might find out later that they owe another royalty to LG, only after they have made structural commitments to Intel's technology." *Ibid.* Such a strategy imposes substantial, unjustified costs on technology manufacturers. There is little doubt that patent exhaustion "is necessary" in these circumstances from a "practical standpoint." Watanabe, *supra*, at 273.

"The exhaustion doctrine constructs the legal framework on which the transactions and markets for patented goods are built." Kyle M. Costello, *The State of the Patent Exhaustion Doctrine, Post-*Quanta *v.* LG Electronics, 18 Tex. Intell. Prop. L.J. 237, 263 (2010). Absent the *Quanta* rule, "a patentee could impose restrictions on the subsequent use and sale of patented articles," and "the aggregation of such restrictions, through multiple downstream transactions, would create vast uncertainty and greatly impede the flow of commerce." *Id.* at 263-264.

The Court should reject the dramatic change in the sale exhaustion doctrine proposed by respondents. Patent owners may not "draft around" the

standard set forth in *Quanta*—if the article is sold in an authorized sale, the exhaustion rules apply.[3]

Finally, respondents claim that an exception to the sale exhaustion doctrine should be recognized because the nature of their invention—in particular the fact that the product is consumed during its use—makes it impossible to employ a licensing model. But permitting the application of exhaustion doctrine to turn upon such a fact-based claim will inject significant uncertainty into patent law. Other patentees will find reasons why a licensing model does not fit their situation and advance similar claims, or threaten to do so in order to extort unjustified royalty payments from downstream purchasers. The certain result is a huge increase in litigation, with little benefit to anyone other than patent lawyers.

To the extent a modification of the sale exhaustion doctrine is warranted, it would make better sense to focus on the unique, easily identifiable fact that is present here—that all that respondents are seeking is to exclude from the sale exhaustion doctrine an article that was never subject to an authorized sale. Permitting patentees to enforce restrictions against downstream purchasers in the very limited situation in which use of the article sold produces a new copy of the patented article would have the virtue of clear application—the situations in which the modification applies should be easily identifiable.

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[3] As the Court noted in *Quanta*, the patent exhaustion doctrine "does not necessarily limit [a patentee's] other contract rights." 553 U.S. at 637 n.7. Even in the absence of an action for patent infringement, there may still exist a remedy through "a breach-of-contract claim." *Ibid.*

Moreover, it would recognize that the sale exhaustion doctrine rests on the conclusion that the sale of an article reflects the value of the patent with respect *to that article*; it does not reflect the value of the myriad copies of the article produced as a result of self-replication. And it targets a situation in which the patentee (and the patent law itself) have an extraordinary interest in limiting the actions of downstream purchasers, because the unconstrained ability to sell the "new copies" would quickly eviscerate the value of the patent.

In sum, the Court should reaffirm the clear limits on the sale exhaustion doctrine recognized in *Quanta*. Any exception to those principles should be limited to what is truly unique about respondents' situation—the self-replicating nature of its product.

CONCLUSION

The judgment of the court of appeals should be affirmed.

Respectfully submitted.

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JANUARY 2013

AMICUS CURIAE BRIEF

No. 11-796

IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN

Petitioner,

v.

MONSANTO CO., ET AL.,

Respondents.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF FOR AMICI CURIAE CENTER FOR FOOD SAFETY AND SAVE OUR SEEDS IN SUPPORT OF PETITIONER

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INTERESTS OF AMICI CURIAE[1]

Center for Food Safety ("CFS") is a non-profit, public interest organization dedicated to addressing the environmental, health, and socioeconomic impacts of food production technologies and promoting sustainable alternatives. Founded in 1997, CFS represents approximately 250,000 consumer and farmer members nation-wide.

Save Our Seeds ("SOS") is a non-profit organization dedicated to improving seed patenting and intellectual property right practices.

Amici seek to protect and restore the natural environment, public health, and the interests of farmers through legal, scientific, and policy avenues. Amici have extensive expertise in the areas of plant intellectual property protection and seed industry concentration. In 2003, CFS launched an investigation to determine the extent to which American farmers are impacted by litigation arising from the use of patented, genetically engineered ("GE" or "transgenic") crops. In 2005, CFS released a comprehensive assessment of Monsanto Company's ("Monsanto's") use of U.S. patent law to control the use of staple crop seeds by farmers. The report, *Monsanto vs. U.S. Farmers*, details the results of this research, discusses the ramifications for the future of U.S. farming, and provides policy recommendations

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[1] The parties have consented to the filing of this brief. No counsel for any party in this case authored this brief in whole or in part, and no person or entity other than amici curiae made a monetary contribution to its preparation or submission.

for improvement.[2] This seminal work, discussed *infra*, which CFS has updated over the past seven years, has made CFS a leading public interest organization providing technical assistance and counsel to farmers, farm organizations, legislators, and attorneys defending patent infringement suits brought by transgenic seed producers such as Respondent Monsanto.

Petitioner Bowman's case is a microcosm of this systemic problem. Amici offer this brief in support of the Petitioner in order to assist the Court's understanding of the broader ramifications of this case on farmers, agricultural markets, and independent scientific inquiry.

BACKGROUND

Respondents and their amici portray agricultural biotechnology as a panacea to all ills imaginable, in hopes this Court will find their policy arguments convincing enough to sustain their "conditional sale" loophole from patent exhaustion, or, if the Court closes it, to create a new exhaustion end-run for them, because seeds naturally reproduce. Their pleas for exemption from longstanding patent doctrine because of their products' alleged benefits

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[2] Ctr. for Food Safety, *Monsanto vs. U.S. Farmers* (2005), *available at* http://www.centerforfoodsafety.org/pubs/CFSMOnsantovsFarmerReport1.13.05.pdf (hereafter "*Monsanto vs. U.S. Farmers*"); *see also* Ctr. for Food Safety, *Monsanto vs. U.S. Farmers 2012 Update* (2012), http://www.centerforfoodsafety.org/wp-content/uploads/2012/11/Monsanto-v-US-Farmer-2012-Update-final.pdf (hereafter "*Monsanto vs. U.S. Farmers Update*").

are directed at the wrong body of government. They also lack any factual basis.

Despite a quarter century of promises and over fifteen years of commercialization, agricultural biotechnology has failed to increase yields, reduce world hunger, or mitigate climate change. The only independent study of transgenic crop yields concluded that transgenic crops have failed to increase yields, while successes in traditional breeding have made yield advances.[3] No commercial transgenic crop has been engineered for increased yield, nutritional enhancement, increased fertilizer use efficiency, or many other promised traits.

Instead, agricultural biotechnology firms have delivered a handful of transgenic commodity crop types that produce insecticides or withstand direct application of herbicides. Virtually 100% of commercial transgenic crop acreage is herbicide-resistant and/or insect-resistant.[4] Herbicide-resistance lends crops the ability to survive intensive spraying of a broad-spectrum herbicide used to kill weeds.

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[3] *See* Doug Gurian-Sherman, Union of Concerned Scientists, *Failure to Yield: Evaluating the Performance of Genetically Engineered Crops* 1-5 (Apr. 2009), *available at* http://www.ucsusa.org/assets/documents/food_and_agriculture/failure-to-yield.pdf.

[4] Econ. Research Serv., U.S. Dep't of Agric., *Adoption of Genetically Engineered Crops in the U.S.* (July 5, 2012), http://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us/recent-trends-in-ge-adoption.aspx.

Respondent Monsanto uses genetic engineering primarily to develop patented "Roundup Ready" crops for use with its Roundup herbicide. American soybeans, corn, cotton, canola, and sugar beets are now largely Roundup Ready.[5] This has made glyphosate (Roundup's active ingredient) the most heavily used chemical pesticide in history, with 180-185 million pounds applied in U.S. agriculture in 2007 alone.[6] Overall pesticide use has increased by 404 million pounds in the 16 years since transgenic crops were first released, largely due to the massive increase in glyphosate use with Roundup Ready crops.[7]

Roundup Ready crops have also fostered an ongoing epidemic of glyphosate-resistant "superweeds" regarded by agronomists as one of the most serious challenges facing American

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[5] *Id.*; *see also* William Neuman & Andrew Pollack, *Farmers Cope with Roundup-Resistant Weeds*, N.Y. Times, May 3, 2010.

[6] EPA, *Pesticide Industry Sales and Usage: 2006 and 2007 Market Estimates*, tbl. 3:6 (Feb. 2011), http://www.epa.gov/opp00001/pestsales/07pestsales/market_estimates06-07.pdf.

[7] Charles M. Benbrook, *Impacts of Genetically Engineered Crops on Pesticide Use in the U.S. – The First Sixteen Years*, 24 Envtl. Scis. Eur. 24 (2012), *available at* http://www.enveurope.com/content/pdf/2190-4715-24-24.pdf; Brian Clark, *Pesticide Use Rises as Herbicide-Resistant Weeds Undermine Performance of Major GE Crops, New WSU Study Shows*, Wash. State Univ. (Oct. 1, 2012), http://news.cahnrs.wsu.edu/2012/10/01/pesticide-use-rises-as-herbicide-resistant-weeds-undermine-performance-of-major-ge-crops-new-wsu-study-shows/.

agriculture.[8] The weeds evolve when farmers grow Roundup Ready crops year after year; like bacteria exposed to antibiotics, some weeds naturally resistant to glyphosate survive exposure, and then reproduce and flourish. Since 2000, evolution of glyphosate resistance in weeds has run rampant, infesting approximately forty to sixty million acres of cropland.[9] These superweeds cause farmers to use more Roundup, more toxic herbicide cocktails, more soil-eroding tillage operations to physically remove weeds, and to deploy weeding crews to manually remove weeds—all of which can significantly increase weed-control costs.[10] Monsanto exacerbated the problem through misleading assurances to

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[8] Comm. on the Impact of Biotechnology on Farm-Level Econ. & Sustainability, Nat'l Research Council, *The Impact of Genetically Engineered Crops on Farm Sustainability in the United States* 82 (2010), *available at* http://dels.nas.edu/resources/static-assets/materials-based-on-reports/reports-in-brief/genetically_engineered_crops_report_brief_final.pdf; Stephen B. Powles, *Gene Amplification Delivers Glyphosate-Resistant Weed Evolution*, 107 Proc. of the Nat'l Acad. of Sci. 955, 955 (2010).

[9] Melody M. Bomgardner, *War on Weeds*, Chemical & Eng'g News, May 21, 2012, at 20, 20-22 (*see* map), *available at* http://cen.acs.org/articles/90/i21/War-Weeds.html; Benbrook, *supra* note 7, at 4.

[10] Charles Benbrook, The Organic Ctr., *Impacts of Genetically Engineered Crops on Pesticide Use: The First Thirteen Years* 28-30, 34-36, 40 (2009), *available at* http://www.organic-center.org/science.pest.php?action=view&report_id=159n; Georgina Gustin, *Resistant Weeds Leave Farmers Desperate*, St. Louis Post-Dispatch, July 17, 2011.

farmers that continual Roundup use with Roundup Ready crops would not foster such weeds.[11]

Meanwhile, industry is now proposing a host of new crops resistant to older and more toxic herbicides like 2,4-D.[12] These crops will dramatically escalate the already extensive toxic herbicide use, greatly increase crop injury from herbicide drift, and foster still more intractable superweeds resistant to multiple herbicides, increasing grower costs and harm to the environment.[13]

Transgenic crops also cause widespread contamination—gene flow from GE crops to related conventional or organic cultivars or wild species. Transgenic contamination is a multifaceted problem[14] that causes significant and widespread

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[11] Bob Hartzler, *What, Me Worry?*, Iowa State University Weed Science, May 1, 2003, http://www.weeds.iastate.edu/mgmt/2003/monad.shtml; Joint Statement from Bob Hartzler et al., *Preserving the Value of Glyphosate*, Feb. 20, 2004, http://www.weeds.iastate.edu/mgmt/2004/preserving.shtml.

[12] Jack Kaskey, *Attack of the Superweed*, Businessweek, Sept. 8, 2011; Scott Kilman, *Superweed Outbreak Triggers Arms Race*, The Wall Street Journal, June 4, 2010.

[13] David A. Mortensen et al., *Navigating a Critical Juncture for Sustainable Weed Management*, 62 BioSci. 75, 75-82 (2012).

[14] *See Monsanto Co. v. Geertson Seed Farms*, 130 S. Ct. 2743, 2756 (2010) (holding that the "injury has an environmental as well as an economic component").

economic harm,[15] a fundamental loss of choice for farmers and consumers,[16] and irreparable contamination of wild species.[17] Unlike standard chemical pollution, transgenic contamination is a living pollutant that can propagate itself via gene flow. As one federal court found: "Once the gene transmission occurs and a farmer's seed crop is contaminated with the Roundup Ready gene, there is no way for the farmer to remove the gene from the crop or control its further spread."[18] In sum, transgenic crops reinforce an industrial agriculture paradigm of questionable sustainability at the

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[15] *See, e.g.*, Andrew Harris & David Beasley, *Bayer Agrees to Pay $750 Million to End Lawsuits over Gene-Modified Rice*, Bloomberg News, July 1, 2011, http://www.bloomberg.com/news/2011-07-01/bayer-to-pay-750-million-to-end-lawsuits-over-genetically-modified-rice.html; K.L. Hewlett & G.S.E. Azeez, *The Economic Impacts of GM Contamination Incidents on the Organic Sector* (2008), *available at* http://orgprints.org/12027/1/The_Economic_Impacts_of_GM_Contamination_Incidents_on_the_Organic_Sector.pdf.

[16] *See, e.g.*, *Geertson Seed Farms v. Johanns*, No. C 06-01075 CRB, 2007 WL 518624, at *9 (N.D. Cal. Feb. 13, 2007); *Ctr. for Food Safety v. Vilsack*, No. C 08–00484 JSW, 2009 WL 3047227, at *9 (N.D. Cal. Sept. 21, 2009).

[17] *See, e.g.*, Jay R. Reichman et al., *Establishment of Transgenic Herbicide-Resistant Creeping Bentgrass (Agrostis stolonifera L.) in Nonagronomic Habitats*, 15 Molecular Ecology 4243, 4251-55 (2006); Mitch Lies, *Bentgrass Eradication Plan Unveiled*, Capital Press, June 16, 2011; *New Study Finds GM Genes in Wild Mexican Maize*, New Scientist, Feb. 21, 2009; Rachel Bernstein, *Study Details Wild Crop of Genetically Modified Canola*, L.A. Times, Aug. 14, 2010.

[18] *Geertson Seed Farms*, 2007 WL 518624, at *5.

expense of more environmentally sound methods of farming.

Respondents' favorite myth about their products is that they are needed in order to "feed the world." Even setting aside that the science shows that transgenic crops do not increase yields, and that the great majority are engineered to be resistant to (and thus sell more) herbicides, *see supra*, this rationale fundamentally misconceives the problem. The United Nations General Comment on the Right to Food concluded that "the roots of the problem of hunger and malnutrition are not lack of food but lack of access to available food. . . ."[19] Hunger today results from institutional, not biological, constraints.

Finally, the current intellectual property environment of transgenic crops has spurred the privatization and concentration of the world's seed supply. Market concentration has resulted in ten multinational corporations holding approximately two-thirds (65%) of commercial seed for major crops, reducing choice and innovation, and increasing prices for the American farmer.[20] An estimated 200 independent seed companies have been lost to

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[19] United Nations Comm. on Econ., Social & Cultural Rights, *General Comment No. 12: The Right to Adequate Food (Art. 11)* ¶ 5 (May 12, 1999), http://www.unhcr.org/refworld/docid/4538838c11.html.

[20] *See, e.g.*, Kristina Hubbard, Farmer to Farmer Campaign on Genetic Eng'g, Nat'l Family Farm Coal., *Out of Hand: Farmers Face the Consequences of a Consolidated Seed Industry* 13, 16 (2009), *available at* http://farmertofarmercampaign.com/Out%20of%20Hand.FullReport.pdf.

consolidation from 1996 to 2009.[21] Four dominant firms in the agrochemical market now account for 43% of the global commercial seed market.[22] Respondents are the world's leading seed firm, accounting for nearly 23% of proprietary seed sales in the world, and 60% of the corn and soybean seed markets.[23] Their biotechnology traits are now planted on more than 90% of U.S. soybean acreage and 80% of corn acreage.[24] As smaller independent companies disappear, farmers find fewer and fewer conventional, non-GE seed options.[25] With concentration has come increasing market power, and seed prices have risen substantially in those crops in which patented transgenic varieties are predominant.[26]

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[21] Hubbard, *supra* note 20 at 4; *see generally* Philip H. Howard, *Visualizing Consolidation in the Global Seed Industry: 1996-2008*, 1 Sustainability 1266-1287 (2009).

[22] Hubbard, *supra* note 20, at 8; James Matson et al., Gov't and Legislative Clinic, Univ. of Wis. Law School, *Intellectual Property and Market Power in the Seed Industry: The Shifting Foundation of Our Food System* 11, 14-17 (Sept. 1, 2012), http://ssrn.com/abstract=2153098.

[23] Hubbard, *supra* note 20, at 13, 17-18, fig. 1, fig. 3.

[24] *Id.* at 17-18; Econ. Research Serv., U.S. Dep't of Agric., *Adoption of Genetically Engineered Crops in the U.S.*, *supra* note 4.

[25] Hubbard, *supra* note 20, at 25-34; Bennett, D., *More Conventional Soybean Acres?*, Delta Farm Press, Feb. 10, 2009, http://deltafarmpress.com/soybeans/conventional-acres-0210/.

[26] Charles Benbrook, The Organic Ctr., *The Magnitude and Impacts of the Biotech and Organic Seed Price Premium* 1-2, 5-7 (Dec. 2009), http://www.organic-

SUMMARY OF ARGUMENT

The "conditional sale" exception upon which Respondents relied to bring alleged patent infringement claims against Petitioner Bowman and hundreds of other U.S. farmers is contrary to a century and a half of patent exhaustion doctrine. This Court should overrule it and reverse. In addition to re-affirming and clarifying that patent doctrine, the Court's decision can restore some much needed balance to U.S. agriculture, with significant benefits to farmers, agriculture, and the general public. Such a decision will not cause meaningful economic harm to Respondents, but will instead further the financial interests of the agricultural sector as a whole.

The Court should also reject Respondents' request that it create an end-run around patent exhaustion for seeds because in the process of their natural use they produce new seed. Farming is using seeds, not constructing or manufacturing seeds. Indeed, this conclusion is supported by the U.S. Patent Act, this Court's precedent, and agronomics.

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center.org/reportfiles/Seeds_Final_11-30-09.pdf; Hubbard, *supra* note 20, at 35-37.

ARGUMENT

I. THE APPLICATION OF PATENT EXHAUSTION WILL GREATLY BENEFIT FARMERS, AGRICULTURE, AND SCIENTIFIC INQUIRY.

The doctrine of patent exhaustion provides that the authorized sale of a patented item terminates all patent rights to that item. *Quanta Computer, Inc. v. LG Elecs.*, 553 U.S. 617, 625 (2008); *see also United States v. Univis Lens Co. Inc.*, 316 U.S. 241, 251-52 (1942); *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 516 (1917); *Adams v. Burke*, 84 U.S. 453, 456 (1873); *Bloomer v. McQuewan*, 55 U.S. 539, 549-50 (1853). The decision below and the other Federal Circuit transgenic seed cases relying on that court's "conditional sale" doctrine to reject exhaustion defenses, PA14a, *Monsanto Co. v. Scruggs*, 459 F.3d 1328, 1335 (Fed. Cir. 2006); *Monsanto Co. v. McFarling*, 363 F.3d 1291, 1298-99 (Fed. Cir. 2002), are contrary to this guidance and cannot stand, because any authorized sale triggers exhaustion. The Solicitor General now agrees. U.S. Amicus Br. at 6 & 10. Thus, Respondents cannot assert patent law to control the use or distribution of seeds sold to a farmer in an authorized sale.

The current intellectual property regime for seeds has been a major factor in seed industry consolidation, rising seed prices, the narrowing of farmers' seed options, the decline of seed saving, the suffocation of independent scientific inquiry into transgenic crops, and the prosecution of America's farmers for alleged patent infringement. Eliminating Respondents' patent exhaustion

immunity would help ameliorate these adverse impacts, to the great benefit of U.S. farmers, scientists, and the public at large.

A. Applying the Doctrine of Patent Exhaustion Will Curtail Respondents' Prosecution of U.S. Farmers.

Petitioner Bowman is unfortunately a microcosm of a systemic problem. For the last ten years, Amici have tracked and analysed Respondents' investigation and prosecution of thousands of American farmers for alleged patent infringement, extracting perhaps hundreds of millions of dollars from them. *See generally Monsanto vs. U.S. Farmers* & *Monsanto vs. U.S. Farmers Update*, *supra* note 2; *see also, e.g., Monsanto Co. v. David*, 516 F.3d 1009 (Fed. Cir. 2008); *Scruggs*, 459 F.3d at 1328-1335; *McFarling*, 363 F.3d 1336 at 1340; *Monsanto Co. v. Ralph*, 382 F.3d 1374 (Fed. Cir. 2004); *Monsanto Co. v. Strickland*, 604 F. Supp. 2d 805 (D.S.C. 2009); *Monsanto Co. v. Parr*, 545 F. Supp. 2d 836 (N.D. Ind. 2008); *Monsanto Co. v. Trantham*, 156 F. Supp. 2d 855 (W.D. Tenn. 2001).

Respondents devote a staff of 75 with an annual budget of $10 million to their efforts, which are divided into three stages: investigations, attempted coerced settlements, and, if that fails, litigation. *Monsanto vs. U.S. Farmers*, *supra* note 2 at 23. They investigate approximately 500 farmers every year. *Id.* at 24-25. According to interviewed farmers, hired investigators trespass on farmers' property to take photos or crop samples; make threats and engage in harassment; adopt disguises (e.g. pretend to be conducting surveys of seed and chemical purchases);

and even engage in entrapment-like activity. *Id.* at 23-28. Respondents also maintain an anonymous hotline, urging farmers to turn in neighbors. *Id.* at 23.

One federal court summarized Respondents "scorched-earth" tactics to enforce its "single use restriction" as follows:

> In order to protect its patents, Monsanto sent "agents" into the farming community to ensure that farmers were not purchasing Roundup Ready seed, harvesting it, saving seed from the crop and then planting second generation Roundup Ready seed the next season. Under the patents, farmers were obligated to purchase new Roundup Ready seed each year and were prohibited from saving second generation seed. This changed the way farmers had done business as traditionally they saved seed, cleaned it and replanted it the following year. The scorched-earth policies used by Monsanto in enforcing the single-use restriction against farmers in some instances altered the customary neighborly relationships for which farmers are known. Instead of helping each other with barn-raisings and equipment sharing, those caught saving seed, a practice that is hundreds of years old, were turned into "spies" against their neighbors, replacing the

> atmosphere of cooperation with one of distrust and suspicion.

Stratemeyer v. Monsanto Co., No. 02-CV-505, slip op. at 3-4 (S.D. Ill. March 28, 2005) (footnote omitted).

Some investigations are confrontational, involving public threats and belligerent conduct. *Monsanto vs. U.S. Farmers*, *supra* note 2, at 25-26.[27] Others, like the one involving Mitchell Scruggs, defendant in another one of Respondents' "conditional sale" infringement cases, *Scruggs*, 459 F.3d at 1332-34, involve long-term surveillance. *Id.* at 24-25. For some farmers, Respondents' investigations border on entrapment. *Id.* at 27. For example, a man visited Illinois farmer Eugene Stratemeyer's farm asking to purchase soybean seeds. It was too late in the season to plant soybeans, lending credence to the man's claim that he wanted to grow soybeans merely for erosion control rather than commercial production. Mr. Stratemeyer agreed to do the man a favor, charging him only what was needed to clean and bag the seed. Only when Mr. Stratemeyer was served with a lawsuit did he learn the man was an investigator hired by Respondents. *Id.*[28]

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[27] *See also* Donald Barlett & James Steele, *Monsanto's Harvest of Fear*, Vanity Fair, May 2008, *available at* http://www.vanityfair.com/politics/features/2008/05/monsanto20 0805.

[28] To hear some farmers tell their stories, *see Agricultural Giant Battles Small Farmers*, CBS News (Jan. 4, 2011), http://www.cbsnews.com/8301-18563_162-4048288.html; Greenpeace Australia, *How Monsanto Put This Farmer in Court over GE Seed*, YouTube (Mar. 12, 2009) http://www.youtube.com/watch?v=Us42DZO0NX0; Joseph

For some farmers, like Petitioner Bowman, Monsanto's investigations lead to the courtroom. As of November 28, 2012, Respondents had filed 142 alleged patent infringement lawsuits involving 410 farmers and 56 small farm businesses in 27 states. *Monsanto vs. U.S. Farmers Update*, *supra* note 2. Sums awarded to Respondents in 72 recorded judgments total $23,675,820.99. *Id.*[29] Bankruptcy is not an uncommon outcome. *Id.* at 21; *see, e.g.*, *In re Trantham*, 304 B.R. 298 (B.A.P. 6th Cir. 2004); *In re Wood*, 309 B.R. 745 (Bankr. W.D. Tenn. 2004); *In re Roeder*, No. 07-01422S, 2009 Bankr. LEXIS 3949 (Bankr. N.D. Iowa Dec. 14, 2009); *see also, e.g.*, *Monsanto Co. v. Strickland*, No. 2:11-ap-80201 (Bankr. D. S.C. Mar. 5, 2012); *Monsanto Co. v. Slusser*, No. 3:11-ap-01170 (Bankr. E.D. Ark. filed May 10, 2011); *Monsanto Co. v. Harden*, No. 2:10-ap-616 (Bankr. W.D. Tenn. Aug. 5, 2011).

Respondents have investigated and sued farmers who believed they had legal grounds for saving seed, such as Petitioner Bowman, but also in cases where

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Watercolor, *Food, Inc. Monsanto Control 90% of US Soybean*, YouTube (Nov. 14, 2010), http://www.youtube.com/watch?v=2P1CJ7IEt0c.

[29] Actual litigation costs to farmers are higher because these figures do not include expert witness fees, post-judgment interest, plaintiffs' attorney fees, or costs of field testing. *See, e.g.*, *Monsanto Co. v. Thomason*, No. 97-01454, (W.D. La. filed July 23, 1997) (awarding $447,797.05 to Respondents and $222,748.00 to Delta Pine in damages; $279,741.00 in attorney fees and $57,469.13 in costs to Respondents; $82,281.75 in attorney fees and $5,801.00 in costs to Delta Pine; and $75,545.83 for testing fields).

their fields were potentially contaminated by pollen or seed from someone else's transgenic crop; when transgenic seed from a previous year's crop sprouted, or "volunteered," in fields planted with conventional varieties the following year; and when they were never presented with, and hence never signed, the Monsanto technology use agreement at the time of seed purchase. *Monsanto vs. U.S. Farmers*, *supra* note 2, at 37-45.

Yet these recorded judgments, startling as they are, fail to convey a true picture of the full scope of Monsanto's actions against U.S. farmers, because the overwhelming majority of Respondents' alleged patent infringement threats end in out-of-court settlements. *Monsanto vs. U.S. Farmers*, *supra* note 2, at 30; *Monsanto Co. v. McFarling*, No. 4:00CV84 CDP, 2005 WL 1490051, at *5 (E.D. Mo. June 23, 2005) ("The vast majority of cases filed by Monsanto against farmers have been settled before any extensive litigation took place . . ."). In such instances, Monsanto uses the significant financial and legal disparity between the parties to pressure farmers into agreeing to confidential settlements for undisclosed sums and other terms.

In 2006 CFS used materials downloaded from Monsanto's website to determine the approximate scope and cost to farmers from these out-of-court settlements. *Monsanto vs. U.S. Farmers Update*, *supra* note 2, at App. II.[30] These documents show

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[30] In a series of ten state/regional updates involving nineteen states, Monsanto provided color-coded maps illustrating the number of "seed piracy matters" by county and the "average settlement" for the given state/region. All cases reported involved Roundup Ready soybeans. The documents covered

that as of June 2006, Monsanto had instituted an estimated 2,391 to 4,531 of so-called "seed piracy matters" against farmers in 19 states.[31] Pursuant to these settlements, farmers paid Monsanto an estimated $85,653,601 to $160,594,230. *Monsanto vs. U.S. Farmers Update*, *supra* note 2, at App. I.[32]

In light of these findings, it is not surprising that several states have enacted "farmer protection" laws to provide their farmers at least some procedural protections from Respondents' practices. *See* Ind. Code §§ 15-15-7-1 to 15-15-7-12 (requiring patent holder to provide written notice before entering farmers' land, permitting farmer to be present when

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Illinois, Indiana, Iowa, Kentucky, Michigan-Ohio, Minnesota-North Dakota-South Dakota, Missouri-Kansas, Nebraska, North Carolina-South Carolina, and Virginia-Maryland-Delaware-New Jersey-Pennsylvania. The documents are included as Appendix II of the *Monsanto vs. U.S. Farmers Update*.

[31] These documents have since been removed from Monsanto's website; nor are more recent documents available for similar estimates over the past six years.

[32] *Monsanto vs. U.S. Farmers Update* Appendix I is a collation of the data. In Monsanto's "seed piracy" updates, each county is color-coded for a range of seed piracy matters (1-3, 4-7, 8-13, 14-23, or 24-36). Adding the lower and upper-bound figures for each county provides the minimum and maximum number of seed piracy matters, respectively, for the given state or region. Multiplication of the minimum and maximum seed piracy matters by the "average settlement" gives the minimum and maximum settlement amounts for the given state/region. Summation of these figures for all nineteen states covered provides the minimum number of settlements (2,391), maximum number of settlements (4,531), and range of settlement amounts.

seed samples are taken, and requiring matching samples be provided to the farmer); N.D. Cent. Code § 4-24-13 (similar); S.D. Codified Laws §§ 38-1-44 to 38-1–50 (similar); Cal. Food & Agric. Code §§ 52300 to 52305 (similar). While these laws underscore the gravity of the problem, as this case illustrates, these procedural safeguards alone are wholly insufficient to stem the tide of farmer prosecutions. Only this Court's decision to apply patent exhaustion can protect farmers and restore balance in U.S. agriculture.

B. Applying the Doctrine of Patent Exhaustion Will Restore Scientific Research.

Respondents' patent-based seed control has not only restricted farmer seed-saving. It has also suppressed independent scientific research on the potential impacts of transgenic crops.

Respondents prohibit anyone buying patented seeds from conducting research on their seed, or transferring seed to someone else for research. Pet'r's Br. at 5 (citing A0284).[33] Scientists cannot buy seeds for their studies, or obtain them from farmers; instead they must seek permission from Respondents, or risk a lawsuit. Respondents can refuse a research request for any reason. *Id.* Scientists who are deemed too critical may be denied permission to conduct research.[34] Even if permission

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[33] Emily Waltz, *Under Wraps*, 27 Nature Biotech. 880, 880-82 (2009).

[34] Rex Dalton and San Diego, *Superweed Study Falters as Seed Firms Deny Access to Transgene*, 419 Nature 655 (2002).

is granted, the patent holders retain the right to limit, control, and approve all studies and any publication.[35] In many cases, these stringent conditions prove unacceptable. For example, in 2008, Respondents demanded the right to approve or deny publication of any findings ensuing from proposed research on Roundup Ready sugar beets by North Dakota State University and University of Minnesota researchers. The universities could not accept the strictures because, as recipients of federal funding, they are obligated to make public (i.e. publish) their research, so they had to abandon the project.[36]

In 2009, 26 prominent university scientists protested this restricted access to seeds in a filing with the Environmental Protection Agency (EPA):

> Technology/stewardship agreements required for the purchase of genetically modified seed explicitly prohibit research. These agreements inhibit public scientists from pursuing their mandated role on behalf of the public good unless the research is approved by industry. As a result of restricted access, no truly independent research can be legally conducted on many

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[35] Andrew Pollack, *Crop Scientists Say Biotechnology Seed Companies Are Thwarting Research*, N.Y. Times, Feb. 19, 2009.

[36] Waltz, *supra* note 33, at 881.

> critical questions regarding the technology.[37]

"If a company can control the research that appears in the public domain, they can reduce the potential negatives that can come out of any research," warned one of the signatory scientists, Professor Ken Ostlie of the University of Minnesota.[38] In another case, Pioneer prohibited researchers from publishing data on the near 100% mortality of lady beetles that had fed on a variety of their transgenic corn.[39]

University scientists have long provided farmers, the public, and U.S. regulatory agencies with reliable, independent data on the properties and performance of crops. Regulators are otherwise dependent almost exclusively on company-provided data in making oversight and safety decisions on transgenic crops. According to the scientists writing to EPA, the current patent-based restrictions "unduly limit[]" the provision of independent scientific data to regulators.[40] Companies can

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[37] *Id.* at 880; Comment on Federal Insecticide, Fungicide, and Rodenticide Act Scientific Advisory Panel Meeting Pertaining to Resistance Risks from Using a Seed Mix Refuge with Pioneer's Optimum® AcreMaxTM 1 Corn Rootworm-Protected Corn (hereafter "*FIFRA SAP Comment*"), http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2008-0836-0043.

[38] Pollack, *supra* note 35.

[39] Waltz, *supra* note 33, at 882.

[40] *FIFRA SAP Comment*, *supra* note 37.

"launder the data, the information that is submitted to EPA."[41]

Critical scientific inquiries are being aborted, and those that are undertaken are manipulated and controlled. This perverse result conflicts with the "primary purpose of our patent laws [which] is not the creation of private fortunes for the owners of patents, but [rather] 'to promote the progress of science and useful arts.'" *Quanta*, 553 U.S. at 626; *Motion Picture Patents Co.*, 243 U.S. at 511 (quoting U.S. Const. art. I., § 8, cl. 8); *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 6 (1966) ("[T]he exercise of the patent power may not overreach the restraints imposed by the stated constitutional purpose. Nor may it enlarge the patent monopoly without regard to the innovation, advancement or social benefit gained thereby."). Properly applying patent exhaustion will help remove these impediments, restoring vitally needed independent scientific research and thus furthering the Patent Act's primary purpose.

C. Applying the Doctrine of Patent Exhaustion Will Benefit U.S. Agriculture by Lowering Farming Costs and Increasing Crop Choice and Innovation.

Respondents' exemption from patent exhaustion has facilitated excessive profits, much of which have been used to capture its present inordinate share of the seed industry. From 2005 to 2009, Respondents spent $4.81 billion, an average of $963 million

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[41] Pollack, *supra* note 35 (quoting Professor Elson Shields of Cornell Univ.).

annually, to acquire seed firms, far more than their entire research and development budget for both seeds and chemicals.[42] Monsanto controls 60% of the corn and soybean seed markets, with their patented traits planted in more than 90% of U.S. soybean acreage and 80% of corn acreage.[43]

As a consequence, seed prices have risen substantially for crops in which patented GE varieties are predominant, such as corn, soybeans, and cotton.[44] The average cost of planting soybean seed on one acre increased modestly, by 60% over the two decades prior to the 1996 introduction of Roundup Ready soybeans (1975-1995): from $8.32 to $13.32. However, in the 16 years since (1995-2011), per acre seed costs have risen by a dramatic 325%, from $13.32 to $55.55.[45] Monsanto's Roundup Ready

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[42] Monsanto Co., *Supplemental Toolkit for Investors* 3 (Feb. 2010) (*see* line item: "Cash Used for Acquisitions"), http://www.monsanto.com/investors/documents/supplemental_toolkit.pdf; Kerry Preete, Monsanto Co., *Goldman Sachs Agricultural Biotech Forum 2011* 14 (Feb. 9, 2011) (showing $7 billion in cumulative R&D from 2001 to 2010, which is $700 million/year), http://www.monsanto.com/investors/Documents/2011/Goldman_Sachs_Presentation.pdf.

[43] Hubbard, *supra* note 20, at 17-18.

[44] Benbrook, *The Magnitude and Impacts of the Biotech and Organic Seed Price Premium*, *supra* note 26.

[45] Econ. Research Serv., U.S. Dep't of Agric., *Commodity Costs and Returns*, (last updated Nov. 15, 2012), http://www.ers.usda.gov/data-products/commodity-costs-and-returns.aspx (under "Data Set" scroll down to "Historical Costs and Returns: Soybeans"; select ""U.S.: 1975-96" (reporting that seed costs per acre were $13.32 in 1995)) (under "Data Set"

trait fee has risen precipitously, from just $4.50 per bag of soybean seed in 1996 to an estimated $17.50 by 2008.[46]

These escalating GE seed prices claim an increasing share not only of farmers' operating costs, but also of their gross crop income and net return per acre.[47] Farmers planting Roundup Ready soybeans in 2010 spent over 20% of their gross income per acre only on the purchase of the seeds, more than twice the historic norm. *Id.* at 2. Net returns on cotton farms have dropped by about $200 per acre as the cost of GE cotton seed increased almost $100 per acre since the introduction of transgenic cotton. *Id.* at 3. "If these GE seed price and income trends continue, the consequences for farmers will be of historic significance, as dollars once earned and retained by farmers are transferred to the seed industry." *Id.* at 4. As farm incomes fall, less money is available to invest in the sustainability of American agriculture.

Further, findings from the U.S. Department of Agriculture's Economic Research Service show that fewer players result in less innovation. As the industry has become more concentrated, research has "dropped or slowed" and those companies that survived consolidation are "sponsoring less research

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scroll down to "Recent Costs and Returns: Soybeans"; select "U.S.: 1997-2001, 2002-05, 2006-11"; select "US 2006-2011" tab (reporting that seed costs per acre were $55.55 in 2011)).

[46] Hubbard, *supra* note 20, at 22 fig.6.

[47] Benbrook, *The Magnitude and Impacts of the Biotech and Organic Seed Price Premium*, *supra* note 26.

relative to the size of their individual markets than when more companies were involved. . . . Also, fewer companies developing crops and marketing seeds may translate into fewer varieties offered."[48]

Additionally, farmers now have fewer and fewer conventional seed options.[49] Conventional soybean shortages were reported in 2009 in Arkansas, Mississippi, Missouri, and Ohio.[50] Demand for non-transgenic varieties is being driven partially because of the skyrocketing prices of GE seeds, which farmers say is particularly unjustified, because they are paying for the same trait each year without yield advantages to justify the higher cost.[51] It is also because of the spread of Roundup-resistant superweeds, which undermines the value of the engineered trait and further increases farm costs in weed control and herbicides. *See supra* pp. 4-5.

Eliminating Respondents' exhaustion loophole and thereby allowing for some seed saving would encourage innovation and act as a check on seed prices, as excessive seed price increases (beyond value added) would likely be met by an increase in

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[48] Jorge Fernandez-Cornejo & David Schimmelpfennig, Econ. Research Serv., U.S. Dep't of Agric., *Have Seed Industry Changes Affected Research Effort?*, Amber Waves, Feb. 2004, at 19.

[49] Hubbard, *supra* note 20, at 25-38.

[50] Hubbard, *supra* note 20, at 35; *see also* Bennett, *More Conventional Soybean Acres?*, Delta Farm Press, Feb. 10, 2009.

[51] Hubbard, *supra* note 20, at 35.

saved seed.[52] Seed-saving would also incentivize firms to offer farmers compelling reasons to forego saving last year's seed and instead purchase new ones, such as new traits. Modestly reduced seed revenue from any increase in seed-saving would also likely check further excessive seed industry consolidation, making for a relatively more competitive seed market. Consolidation's adverse impacts of decreased innovation, sharply increasing prices, and declining seed options would be ameliorated by application of competition- and efficiency-enhancing patent exhaustion, to the benefit of farmers and U.S. agriculture as a whole.

D. Respondents' Allegations of Harm Are Grossly Overstated.

If the doctrine of patent exhaustion is properly applied, the agricultural biotechnology industry will not suffer any significant, let alone cataclysmic, economic harm. First, Respondents still retain ample contract remedies. *Quanta*, 553 U.S. at 637 n.7; *Keeler v. Standard Folding Bed Co.*, 157 U.S. 659, 666 (1895); *Hobbie v. Jennison*, 149 U.S. 355, 363 (1893); *Bloomer v. McQuewan*, 55 U.S. 539, 549-50 (1852). Contract law sufficiently protects Respondents' interests, and has the additional advantage of furthering the public interest, by prohibiting unconscionable agreements and subjecting sales to antitrust law. Antitrust laws are critical to protecting free enterprise, which is "[t]he

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[52] Harry First, *Controlling the Intellectual Property Grab: Protect Innovation, Not Innovators*, 38 Rutgers L.J. 365, 386-87 (2007) (arguing that restrictions after first sale can fix prices no less than other price-controls that courts have found per se illegal).

heart of our national economic policy." *Standard Oil Co. v. Fed. Trade Comm'n*, 340 U.S. 231, 248 (1951). Contract remedies are normally limited to compensatory damages, 24 Williston on Contracts § 64:1 (4th ed. 2012), while patent prosecution raises the specter of treble damages. 35 U.S.C. § 284. Respondent may prefer to wield punitive damages against farmers and be shielded from laws ensuring individual economic freedoms, but the purpose of patent law is "not the creation of private fortunes for the owners of patents." *Quanta*, 553 U.S. at 626.

Respondents have further recourse via Certificates of Protection under the Plant Variety Protection Act (PVPA). *See* 7 U.S.C. Part 2326.[53] PVPA Certificates confer the breeder exclusive marketing rights for a twenty-year term, offering protection against illicit reproduction by a corporate competitor. While the PVPA provides an exemption for farmers to save and replant seeds for their own use, *id.* at 2543, it strictly prohibits farmers from selling or transferring saved seed for planting purposes, *id.* at § 2541, thus addressing misplaced concerns that farmers could somehow compete with seed firms in the commercial seed marketplace.

Respondents are well aware that they have alternative avenues, since this is how they operate in the many countries in the world where they lack the current immunity they erroneously enjoy in the United States. In Brazil, Respondents have structured a royalty collection scheme for their

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[53] *See also* Jorge Fernandez-Cornejo, Econ. Research Serv., U.S. Dep't of Agric., *The Seed Industry in U.S. Agriculture* 20-21 (2004).

transgenic soybeans based on contractual arrangement.[54] Similarly, in Argentina, biotech companies license their traits to seed producers, who then enter into contracts with farmers requiring royalty payments every time farmers plant transgenic seed.[55] The Argentine "extended royalty" program operates by contract agreement even though Argentina has codified a Farmer's Privilege to re-sow seed.[56] The United Kingdom requires royalty fees for farmers who opt to save and replant certified seeds: farmers pay approximately 50 percent of the royalty they would for purchased seed.[57]

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[54] Guilherme Fowler de Ávila Monteiro & Decio Zylbersztajn, *Economic Governance of Property Rights: A Comparative Analysis on the Collection of Royalties in Genetically Modified Soybean Seeds* 12-13, *available at* http://extranet.isnie.org/uploads/isnie2011/monteiro_zylbersztajn.pdf.

[55] Mercedes Campi, *Innovation and Intellectual Property Rights. The case of Soybean Seeds in Argentina and the U.S.* 23 (paper presented Nov. 2011), *available at* http://www.ungs.edu.ar/globelics/wp-content/uploads/2011/12/ID-140-Campi-Privatization-of-Knowledge-Intellectual-Property-Right.pdf.

[56] *See* Argentina Resolution 35/96 on the Seed Law 20.247 Measures Adopted Concerning the Farmer's Privilege, UPOV Gazette No. 94 (2002), *available at* http://www.wipo.int/wipolex/en/text.jsp?file_id=224252.

[57] Richard Gray & Katarzyna Bolek, Univ. of Saskatchewan, *A Brief Overview of Crop Research Funding Models* 17 (Aug. 2010), *available at* http://www.ag-innovation.usask.ca/cairn_briefs/policy%20briefs/No001_Paper_Cropresearchfundingmodels_Bolek_Gray_Aug2010.pdf.

Moreover, while an outcome allowing for some seed saving would give farmers faced with sharply rising costs further options, it is unlikely that seed saving would increase dramatically or inhibit seed companies' research and development. There would be no impact at all in corn, since nearly all corn grown in the U.S. is hybrid; farmers do not replant hybrid seeds due to significant yield decline.[58] Corn is by far the industry's most profitable seed, garnering 58% of Monsanto's 2009 gross seed profits, three-fold more than soybeans (19%).[59] Even with crops that can be replanted such as soybeans, a precipitous decline in the proportion of U.S. soybean acreage from saved seed—from 45% in 1982 to 25% in 1997 to just 5.9% in 2002[60]—strongly suggests that only a minority of growers would have interest in re-adopting this practice. Thus, patent exhaustion would likely only facilitate seed-saving of non-hybrid crops primarily in those limited circumstances where the economics are particularly compelling: for instance, soybean farmers strapped for cash after a

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[58] Fernandez-Cornejo, *The Seed Industry in U.S. Agriculture*, *supra* note 53, at vi; Dale Farnham, Joe McClure & Neil Wubben, Ne. Research and Demonstration Farm, Iowa State Univ., *F1/F2 Corn Variety Study*, ISRF01-12 (2001), *available at* http://www.ag.iastate.edu/farms/2001reports/ne/F1F2Cornvariety.pdf.

[59] Monsanto Co., *Supplemental Toolkit for Investors*, *supra* note 42, at 4.

[60] Fernandez-Cornejo, *The Seed Industry in U.S. Agriculture*, *supra* note 53, at 26 n.7, 36 tbl.17; A. Bryan Endres, *State Authorized Seed Saving: Political Pressures and Constitutional Restraints*, 9 Drake J. Agric. L. 323, 338 (2004).

poor harvest; or for those who wish to double-crop soybeans, where limited yield and hence profit potential makes a source of low-cost seed vital to the economic viability of this beneficial practice.

Hence, restoring patent law would mean a more balanced future, bringing a modest decline in the industry's seed revenue, while still allowing firms to make a fair return on their research and development investments. This is a far cry from the industry's hyperbolic claims of significant harm.

II. FARMING IS NOT A "MAKING" 35 U.S.C. § 154 VIOLATION.

Aware that their exhaustion "conditional use" reliance is on shaky ground and likely to be extinguished, Respondents ask this Court create for them a new end-run around exhaustion. Farmers, through the normal process of farming, would be held to "make" or "reconstruct" a "newly infringing article," *see* PA14a, since exhaustion does not apply to "making" violations under 35 U.S.C. § 154. *See Quanta*, 553 U.S. at 637. This loophole would permit Respondents to maintain restrictions after authorized sale, because normal use would produce another generation of seed. In so doing the Court's application of exhaustion doctrine would be largely negated, simply because farmers use seeds for their foreseeable and natural purpose, the very thing they are intended to be "used" for: planting. The Court should reject these arguments.

A. Respondents' Arguments Are Contrary to *Quanta*.

The *Quanta* Court held that if a particular patent, such as a method patent, is exhausted, the rights to any product that "embodied" them were similarly exhausted. *Id.* at 627-29; *see also United States v. Univis Lens Co.*, 316 U.S. 241, 250-51 (1942). Thus, after an authorized sale exhausts patent rights, anything that "embodies" the invention cannot be controlled by the patent holder via patent law. The Court's ruling applies equally to "self-replicating technologies" such as next generation seed produced from seeds to which patent rights have previously been exhausted via sale to the farmer. Even more so than the incomplete computer parts in *Quanta*, progeny seeds will embody *all* of the qualities of their predecessor seed.[61]

As in *Quanta*, this case "illustrates the danger of allowing such an end-run around exhaustion." 553 U.S. at 630. As with method patents, creating an exception for seeds would "seriously undermine the exhaustion doctrine." *Id.* at 629. Farmers' freedom from post-sale patent use restrictions on seeds (and Respondents' patent-based enforcement) would be fleeting, becoming illusory after one planting cycle. This Court stated that by "characterizing their claims as method instead of apparatus claims" a

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[61] The Federal Circuit's reliance on the use of some next generation seed for feed (PA14a) conveniently ignored that planting is the only intended use for first generation seed bought from Respondents, the sale that triggers exhaustion. Moreover the inquiry of whether another use is possible is unnecessary here since, unlike in *Quanta*, seeds completely embody their predecessors. *See* 553 U.S. at 630-31.

patent holder "could shield practically any patented item from exhaustion." *Id.* at 629-30. This is precisely what Respondents are attempting here.

B. Farming Is Using Seed, Not Making It.

Reproduction of seed by planting—also known as *farming*—is by its plain, ordinary language properly understood to be "using" seed, not "constructing" it. *See Stenberg v. Carhart*, 530 U.S. 914, 993 n.9 (2000) ("It is certainly true that an undefined term must be construed in accordance with its ordinary and plain meaning."). Patent exhaustion applies where a purchaser buys a patented item "for the purpose of using it in the ordinary pursuits of life." *McQuewan*, 55 U.S. at 549 (holding that, in such use, "when the machine passes to the hands of the purchaser, it is no longer within the limits of the monopoly. It passes outside of it, and is no longer under the protection of the act of Congress."); *see also Quanta*, 553 U.S. at 625 (quoting *McQuewan*). Growing plants that produce seeds (and replanting a portion of them) is a succinct definition of farming, as practiced in human societies for 10,000 years, since the beginning of agriculture.[62] The practice is undeniably part of the "ordinary pursuits of life." Moreover, because planting seed is also a "common" and "noninventive" step that results in an item "substantially embodying" the patented product, the practice cannot be an impermissible "making" violation. *See Quanta*, 553 U.S. at 634.

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[62] *See generally* J. Bishop Grewell, Clay J. Landry & Greg Conko, *Ecological Agrarian: Agriculture's First Evolution in 10,000 Years* (2003).

Further, a purchaser's use rights extend to include use of an item "to the full extent to which it can be used in point of time." *Adams v. Burke*, 84 U.S. 453, 455 (1873). Use ends only when the item is "worn out." *Mitchell v. Hawley*, 83 U.S. 544, 547 (1872). The extent of seeds' natural use includes replanting. Seed used to its full extent continues the transformative cycle of becoming plants that once again become seeds. Indeed, most farmers purchase seeds precisely because they are not "worn out" after the first generation, but instead continue to produce progeny.

In contrast, Respondents' attempt to characterize farming as "making" is contrary to logic and finds no support in the statute or this Court's precedent. Synonyms for "make" have included "manufacture," *see Aro Mfg. Co.*, 365 U.S. at 340-41; *Univis Lens Co.*, 316 U.S. at 249; *Adams*, 84 U.S. at 456, and "construct," *see Mitchell*, 83 U.S. at 547. Inapposite examples in which the Court held impermissible "making" violations focus on creating machines, *see Bloomer v. Millinger*, 68 U.S. 340, 340-42 (1863); *Mitchell*, 83 U.S. at 547, or other items that are made by piecing together different components. *Am. Cotton-Tie Co. v. Simmons*, 106 U.S. 89, 93-94 (1882). Similarly, the Federal Circuit erroneously relied on its decision in *Jazz Photo Corp. v. International Trade Commission*, in comparing farming to impermissible "reconstruction" of an invention. PA14a (citing *Jazz Photo Corp. v. Int'l Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001)). Neither Bowman, nor any farmer, is manufacturing a seed, or constructing it, or reconstructing it, when he or she plants it.

This Court has never used a synonym for "making" in the patent context that would encompass the meaning Respondents urge,[63] and should reject it here. *See Bauer & Cie v. O'Donnell*, 229 U.S. 1, 10-11 (1913) ("The right to make can scarcely be made plainer by definition, and embraces the construction of the thing invented. The right to use is a comprehensive term and embraces within its meaning the right to put into service any given invention.").[64] Interpreting farming as "making" would negate its natural definition of use, since exhaustion would not apply. *Dole v. United Steelworkers of Am.*, 494 U.S. 26, 36 (1990) ("The traditional canon of construction, *noscitur a sociis*, dictates that 'words grouped in a list should be given related meaning.'") (citation omitted).

It would also lead to unprecedented market power for patent holders of "self-replicating" technologies, above and beyond any other patent holders' rights. *See, e.g., Deepsouth Packing Co. v. Laitram Corp.*,

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[63] Monsanto's own seed sales contract classifies planting as "using seeds," not making them. *See* Monsanto Co., *2011 Monsanto Technology/Stewardship Agreement* 1-2 (2011) (farmer agrees to "*use* seed . . . solely for planting a single commercial crop," granting farmers "the right to *use* the Monsanto Technologies") (emphases added); Monsanto Co., *Monsanto Technology Use Guide* 2 (2012) (referring to "[u]sing seed . . . solely for planting" and employment of seeds as "use" and "using those products"). Respondents had no qualms characterizing the restriction to be a use restriction before it became a strategic liability to so classify the activity.

[64] The two rights are separate and should not be conflated. *See Bailey v. United States*, 516 U.S. 137, 146 (1995) ("We assume that Congress used two terms because it intended each term to have a particular, nonsuperfluous meaning.").

406 U.S. 518, 531 (1972) (requiring "a clear and certain signal from Congress before approving the position of a litigant who, as respondent here, argues that the beachhead of privilege is wider, and the area of public use narrower, than courts had previously thought"). Such patent holders could control and eliminate secondary markets, giving them more structural power than Congress contemplated.[65] As discussed *supra*, Respondents already have substantial market power and concentration; American agriculture is the *last place* further control would be needed.

C. Farming Is Not Genetic Engineering.

In asserting that farming and genetic engineering are both similarly "making" plants, Respondents ask this Court to pursue the illogical stretch of equating farmers' non-inventive activities of planting and harvesting with scientists' insertion of non-plant genetic material into plant DNA.

Planting seed in the normal course of farming and having it reproduce is vastly and fundamentally different than genetic engineering. Bowman is not "constructing" the seed, or even responsible for the natural process—plants have the ability to reproduce

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[65] *See* John Mayo & Scott Wallsten, *Secondary Markets: The Quiet Economic Value Creator*, McDonough Sch. of Bus. Econ. Pol'y, Georgetown Univ., Vignette 5, 9 (Dec. 2011) (discussing "[t]he vital role of secondary markets" and concluding that "policies that enable the growth and development of secondary markets are likely to serve the nation as we seek to promote both the competitiveness and expansion of economic activity in the U.S.").

on their own. Neither Bowman (nor Respondents) carries out any of the complex biological steps involved in reproduction (meiosis, sexual recombination to produce seed, germination of the seed, and growth of the seedling leading to the new plant). Indeed, crop seeds sprout to become "volunteers" completely of their own accord, without human intervention. To ascribe Bowman or any farmer property rights to this process is a misattribution of agency.

Genetic engineering, on the other hand, allows laboratory scientists to insert genetic material from one organism into an entirely unrelated one with which it could never breed in nature—for example, from bacteria into corn, or humans into rice—thereby conferring a new property or trait on the recipient organism.[66]

In order to do this, a donor organism that exhibits the desired trait (usually a soil bacterium) must be found. The gene responsible for the desired trait is then identified and cloned. The cloned gene is modified as needed to make it compatible with the recipient organism and spliced together with other DNA sequences, including an antibiotic or herbicide resistance marker gene and promoter sequence, to

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[66] Michael Hansen, Ph.D, Consumer Pol'y Inst., *Genetic Engineering Is Not An Extension of Conventional Plant Breeding* (Jan. 2000), http://www.consumersunion.org/food/widecpi200.htm; Bill Freese, Ctr. for Food Safety, *A Grain of Caution: A Critical Assessment of Pharmaceutical Rice* (Apr. 2007), http://www.centerforfoodsafety.org/pubs/Pharmaceutical%20Rice-FINAL.pdf.

form a genetic construct. A gene gun or plant-parasitic bacterium is used to insert the construct into the plant.[67]

For example, to develop Roundup Ready soybeans, scientists first identified a glyphosate-resistant strain of the soil bacterium *Agrobacterium tumefaciens;* identified the gene responsible for resistance; fused it to gene fragments from other species—cauliflower mosaic virus, petunia and another strain of Agrobacterium—and inserted it into a soybean plant, thus conferring upon it the soil bacterium's glyphosate-resistance. Consider this explanation from *Scientific American* of how Respondents engineered Roundup Ready crops:

> A seven-year search for the right gene ended in an outflow pipe from a Monsanto facility in Louisiana. There researchers looking for organisms that could survive amid the glyphosate runoff discovered a bacterium that had mutated to produce a slightly altered form of the EPSPS enzyme. The altered enzyme made the same three amino acids but was unaffected by glyphosate. Scientists isolated the gene that coded for it and, along with various housekeeping genes (for control and insertion of the gene for the enzyme) collected from three other organisms, implanted it in soybean cells with a gene gun.

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[67] Univ. of Nebraska-Lincoln, *Making a Genetically Engineered Crop,* http://cropwatch.unl.edu/web/biotechnology/makinggmo.

> This is a brute-force technology in which the selected DNA is wrapped around microscopic specks of gold that are blasted at soybean embryos, in hopes that at least a few will find their way to the right place on a chromosome. Tens of thousands of trials resulted in a handful of plants that could withstand glyphosate and pass the trait down to their descendants. Starting in 1996, Monsanto began selling these soybean seeds as Roundup Ready. Seeds for glyphosate-resistant cotton, canola and corn followed soon after.[68]

The vast and fundamental differences between these two processes underscore that farming, unlike genetic engineering, is not "making."

Further, Respondents' engineering process also illustrates why Monsanto's patent rights cannot be read to extend to the entire seed and natural reproduction. Respondents' patented transgenic construct is an extremely minor component (1 in 46,430 genes in the soybean genome),[69] that has no powers of reproduction. Their attempt to extend their rights to the entire seed and its progeny violates the policy of limiting a patentee's monopoly to the four corners of its patent. *Univis Lens Co.*,

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[68] Jerry Adler, *The Growing Menace from Superweeds*, Sci. Am., May 2011, at 78.

[69] Jeremy Schmutz et al., *Genome Sequence of the Palaeopolyploid Soybean*, 463 Nature 178, 178 (2010).

316 U.S. at 251 (relying on "the public policy which limits the granted monopoly strictly to the terms of the statutory grant"); *In re Indep. Serv. Orgs. Antitrust Litig*, 203 F.3d 1322, 1327-28 (Fed. Cir. 2000) (stating that a patentee may not exploit its statutory right to prohibit sales to achieve monopoly in market outside the patent scope). While a tiny fraction is transgenic, the rest of the farmer's lost property comprises the seed's natural traits, traits in which Monsanto has no legitimate intellectual property interest.

D. Considering Farming "Making" Allows the Absurd Result that Contaminated Farmers Are Also Infringers.

Farmers who purchase first generation transgenic seeds in the authorized sale from Respondents or their licensees lawfully own all progeny seeds. However, patent infringement is a strict liability offense. *See, e.g., Jurgens v. CBK, Ltd.*, 80 F.3d 1566, 1570 n.2 (Fed. Cir. 1996). Thus, considering farming to be "making" would create the absurd result that, in addition to farmers who purchase the seeds, conventional or organic farmers, or even the everyday gardener, who were *unintentionally and/or unknowingly contaminated* by transgenic seed would also be impermissibly violating Respondents' patent rights by "making" their product.

As a Federal Circuit jurist opined in a related context, this result "cannot possibly be correct":

> This crystalline compound raises a question similar to one that might arise

> when considering the invention of a fertile plant or a genetically engineered organism, capable of reproduction, released into the wild. Consider, for example, what might happen if the wind blew fertile, genetically modified blue corn protected by a patent, from the field of a single farmer into neighboring cornfields. The harvest from those fields would soon contain at least some patented blue corn mixed in with the traditional public domain yellow corn—thereby infringing the patent. The wind would continue to blow, and the patented crops would spread throughout the continent, thereby turning most (if not all) North American corn farmers into unintentional, yet inevitable, infringers. The implication—that the patent owner would be entitled to collect royalties from every farmer whose cornfields contained even a few patented blue stalks—cannot possibly be correct.

SmithKline Beecham Corp. v. Apotex Corp., 365 F.3d 1306, 1330-31 (Fed. Cir. 2004) (Gajarsa, J., concurring). A holding sanctioning such an outcome would violate the cardinal principle of statutory construction that such "absurd results are to be avoided." *See, e.g.*, *United States v. Turkette*, 452 U.S. 576, 580 (1981).

As discussed *supra*, Respondents have already prosecuted farmers for patent infringement despite lack of intent or contract. *Monsanto vs. U.S.*

Farmers, *supra* note 2, at 37-46. In fact, the threat of unintentional transgenic contamination lawsuits forced dozens of family farmers, seed businesses, and organic agricultural organizations (including Amici) to file a lawsuit against Respondents in 2011, seeking a declaratory judgment that Respondents cannot sue them for patent infringement should they become contaminated by Respondents' patented seed. *Organic Seed Growers & Trade Ass'n v. Monsanto Co.*, 851 F. Supp. 2d 544 (S.D.N.Y. 2012), *appeal docketed*, No. 12-1298 (Fed. Cir. Apr. 3, 2012) (oral argument scheduled for Jan. 10, 2013). Accordingly, the Court should maintain a meaningful "making" definition of patent infringement—one that does not potentially encompass every American farmer as an "infringer"—which would properly avoid this adverse and absurd result.

CONCLUSION

The judgment of the court of appeals should be reversed.

Respectfully submitted,

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December 10, 2012

CERTIFICATE OF WORD COUNT

As required by Supreme Court Rule 33.1(h), I certify that the document contains 8,912 words, excluding the parts of the document that are exempted by Supreme Court Rule 33.1(d).

I declare under penalty of perjury that the foregoing is true and correct.

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AMICUS CURIAE BRIEF

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In The
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VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, *et al.*,

Respondents.

On Writ Of Certiorari To The United States Court Of Appeals For The Federal Circuit

BRIEF FOR *AMICUS CURIAE* CHS INC. IN SUPPORT OF RESPONDENTS

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INTEREST OF THE *AMICUS CURIAE*[1]

CHS Inc. is a global agribusiness owned by farmers, ranchers and cooperatives across the United States. CHS started as a regional cooperative of grain growers in 1929. Today, with diversified businesses in energy, grains and foods, CHS helps its customers, farmer-owners and other stakeholders grow their businesses through its domestic and global operations.

CHS annually moves more than a billion bushels of grain internationally to 60 countries and is the largest cooperative marketer of grain in the United States. CHS's grain business operates in sixteen states and Canada and is comprised of a closely integrated network of elevators, marketing offices and export terminals serving customers on a global scale. CHS is a global leader in efficiently moving, processing and marketing the highest quality grains and grain-based products.

Having a national core of growers allows CHS access to an uninterrupted supply of the finest crops available. A closely coordinated storage and transportation network ensures timely and cost-efficient delivery for the freshest possible food products.

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[1] No counsel for a party authored this brief in whole or in part, nor made a monetary contribution intended to fund the preparation or submission of the brief. No one other than an *amicus* or counsel made a monetary contribution to the preparation or submission of this brief. Pursuant to this Court's Rule 37.3(a), letters of consent were filed by the parties.

CHS is concerned that Petitioner's act of buying commodity grain, then planting that undifferentiated grain as seed falls well outside the normal acquisition and distribution channel for grains. Petitioner's request for relief is premised on the incorrect representation that grain elevators routinely sell and growers routinely buy commodity grain for planting. If the Court were to hold that purchasing undifferentiated commodity grain containing a genetically enhanced trait from a grain elevator would have patent exhaustion implications, it would have unintended and extremely adverse consequences on CHS and the entire U.S. grain industry.

SUMMARY OF THE ARGUMENT

The practice of purchasing undifferentiated "bin run" grain for planting is not common and, if accepted or incentivized, would encourage or even force grain elevators to violate state and federal law governing the labeling of seed. Grain elevators like CHS are in the business of selling harvested grains into domestic and international markets where it can be processed into oils, meals, feed, or food. CHS does not sell commodity grain to growers for planting.

Further, genetically enhanced seed traits, like Monsanto Roundup Ready® trait, provide a benefit to the entire grower-grain dealer distribution channel. Genetically enhanced traits allow growers to increase crop yields, reduce pesticide use and decrease operator

time and interventions. The increase in yield allows grain elevators to buy and sell more volume, export more grain and provide better pricing to their customers. Research and development of genetically enhanced seed traits is costly, requiring seed manufactures to invest billions of dollars per year. Petitioner's actions take value out of the cycle and, if adopted on a larger scale, would disincentive innovators from investing in the development of new genetically enhanced seed.

ARGUMENT

I. Buying "Commodity Seed" for Planting is Not a Common or Accepted Practice

Petitioner makes several arguments predicated on purported "facts" about commonplace farming practices – none of which are commonplace and all of which would have adverse and unintended consequences on the nation's grain industry were they accepted as a norm.

A. Growers Buy Seed from a Seller or Re-Seller and Deliver Grain

Separate from CHS' operations of its integrated network of grain elevators, CHS is also a seed re-seller – essentially a retail outlet for farmers to buy seed for planting. As a re-seller, CHS buys seed from seed manufacturers like Monsanto and sells seed to its grower-members. Generally, seed is either packaged

in a bag by the manufacturer or sold in bulk. Bags of seed are sold with a required label or "bag tag" which sets forth a wealth of legally required, important information about the seed, including but not limited to, the variety, maturity, germination, purity, tolerances, traits, and weight.[2] For bulk seed, it is also labeled by the truck and sorted by variety.

After the seed is purchased, planted, cultivated and harvested, a grower delivers the harvested crop to a grain elevator. The grain elevator tests the grain for weight, moisture, dirt and other impurities. Assuming the load is acceptable, the grain is routinely co-mingled with all other grains of the same kind, for example #2 yellow corn or #1 yellow soybean.[3] Once the grain is co-mingled, the grain is commonly referred to as "bin run" grain or commodity grain, and it is no longer labeled or capable of being labeled as to varieties, germination, purity, moisture or other pertinent characteristics of the grain.

B. Grain Elevators Cannot Sell "Commodity Seed" to Growers for Planting

Central to Petitioner's request for relief is his assertion that U.S. farmers "have been using commodity

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[2] Federal Seed Act, 7 U.S.C. §§ 1551-1611.

[3] *See generally* U.S. Grain Standards Act, 7 U.S.C. §§ 71-87(k) *et seq.*; Official U.S. Standards for Grain, 7 C.F.R. § 810.101 *et seq*. The specific kind, type and quality classifications for corn and soybeans are contained in 7 C.F.R. §§ 810.401 – 810.405 and 7 C.F.R. §§ 810.1601 – 810.1605, respectively.

grain from grain elevators as a low-cost seed source for generations." Pet. Br. at 6 (citing A0627). This is simply not accurate, nor can it be given the various and comprehensive state and federal statutes governing the sale and labeling of seed.

The Federal Seed Act ("FSA") requires all sellers of seed comply with certain labeling and record-keeping requirements that allow the grower to know exactly what is being planted and permit the seed to be tracked.[4] In addition to the FSA, most states, including all states essential to CHS' operations, have enacted similar labeling laws regarding the labeling of seed for planting.[5]

Each state's seed labeling law prohibits the distribution of seed without a clear label stating at a minimum, the seed variety and germination.[6] Seed sellers are subject to regulation and inspection by state regulators, who assure that the information contained on the label accurately reflects the contents

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[4] 7 U.S.C. §§ 1571-1572.

[5] *See, e.g.*, IND. CODE §§ 15-15-1-1 – 15-15-1-43 (2012); MINN. STAT. §§ 21.80 – 21.92 (2012); MONT. CODE ANN. §§ 80-5-120 – 80-5-144 (2011); N.D. CENT. CODE §§ 4.1-53-01 *et seq.* (2013); TEX. AGRIC. CODE ANN. §§ 61.001-61.019; WASH. REV. CODE §§ 15.49.005 – 15.49.950 (2012); WIS. STAT. §§ 94.38 – 94.46 (2012).

[6] IND. CODE § 15-15-1-32; MINN. STAT. § 21.82; MONT. CODE ANN. § 80-5-123; N.D. CENT. CODE § 4.1-53-13; TEX. AGRIC. CODE ANN. § 61.004; WASH. REV. CODE § 15.49.031; WIS. STAT. § 94.385; WIS. ADMIN. CODE DEP'T AGRIC. TRADE & CONSUMER PROT. § 20.04.

in the bag. Penalties for violating seed labeling laws include civil and administrative fines, revocation of licenses and certifications, and even criminal prosecution.[7]

The Federal government and each state also have seed certification regulations which assure the farmer that the seed contained in the bag is of the variety stated and meets germination and purity standards.[8] The purpose of seed certification is to preserve genetic purity and identity.[9] Requirements for producing certified seed of field crops include planting eligible stock, field inspection of the growing crop, conditioning seed in an approved plant, sampling, laboratory analysis and proper labeling of the seed. These requirements provide the buyer with the best possible assurance that the buyer is obtaining good quality seed of known purity and heredity. Seed certification

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[7] *See, e.g.*, 7 U.S.C. § 1596; IND. CODE §§ 15-15-1-39 – 15-15-47; MINN. STAT. § 21.86; MINN. R. 18J.03 – 18J.11; MONT. CODE ANN. § 80-5-134; N.D. CENT. CODE § 4.1-53-54 – 4.1-53-57; TEX. AGRIC. CODE ANN. §§ 61.017 – 61.018; WIS. STAT. § 94.46(4)(b).

[8] 7 C.F.R. §§ 201.68 – 201.71; N.D. CENT. CODE § 4.1-53-42; TEX. AGRIC. CODE ANN. §§ 62.001 – 62.011; WASH. ADMIN. CODE § 16-302-005 (2012).

[9] 7 C.F.R. § 201.70; N.D. CENT. CODE § 4.1-53-44; Ass'n of Seed Certifying Agencies, Seed Certification Gen. Principles, http://www.organicseedfinder.org/Page/Seed_Certification.aspx?nt=966 (last visited Jan. 21, 2013); Minn. Crop Improvement Ass'n, *Agronomic Seed Certification Standards*, 3 (March 30, 2012), http://www.mncia.org/assets/documents/pub/seedcert/Agronomic_Seed_Certification_Standards.pdf.

is a limited generation system based on four classifications.[10] Those classifications are as follows:

1. Breeder: Seed that is very limited in amount and is directly controlled and produced by the breeder, owner or public institution. Breeder seed is not sold in ordinary commercial channels.

2. Foundation: Seed that is the progeny of Breeder seed and is generally grown under the supervision of a Foundation Seed Program of the public or private institution controlling the variety.

3. Registered: Seed that is the progeny of Foundation or Breeder seed (depending on the variety). Registered seed is normally required to produce certified seed.

4. Certified: Seed that is the progeny of Registered seed or Foundation seed. Certified seed is the seed genetically available to farmers and sold by manufacturers or re-sellers.[11]

Pursuant to federal and state seed certification regulations, the progeny of Certified seed must enter the commodity grain market and may not be used for planting.[12] Once grain is harvested and commingled

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[10] *See, e.g.*, 7 C.F.R. §§ 201.69 – 201.70.

[11] *See, e.g.*, 7 C.F.R. § 201.69; WASH. ADMIN. CODE § 16-302-015.

[12] Federal regulations prohibit selling the progeny of certified seed as seed except in two very limited circumstances, neither of which applies to Petitioner's actions. 7 C.F.R. §§ 201 *et seq.*

(Continued on following page)

with other grain of a like kind and quality, it is impossible to distinguish the variety from which it was grown, and it is not tested for germination rate or other particular characteristics. It would be impossible for a grain elevator to comply with federal or state labeling and certification requirements if bin run grain were sold for planting.

C. Forcing Grain Elevators to Treat Commodity Grain as Seed Would Impose a Completely Different Function on the Grain Marketing System and Substantially Increase Costs

When farmers deliver their crops to a grain elevator, like CHS, they are delivering that crop as a commodity grain, not as seed. This difference is critical to the function grain elevators and warehouses play in both the domestic and international grain markets. CHS's grain business is set up to turn volume on commodity grain, not to act as a receiving station for progeny seed. CHS sorts grain by kind, type and quality and nothing else in the ordinary course of its business.

CHS is not equipped to certify every truck load delivered by every grower in a manner that would

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(stating in pertinent part, "[t]he number of generations through which a variety may be multiplied shall be limited to that specified by the originating breeder or owner and shall not exceed two generations beyond the Foundation seed class. . . .").

track the variety, purity, germination, genetic trait, and the host of other pertinent information contained on a seed bag tag at the time of harvest. Grain elevators, generally, are set up to handle mass amounts of grain and to move that grain quickly through distribution channels as grain, not as seed. There is also a large margin difference on grain as compared to seed. Grain is by far less expensive than seed *because* it is undifferentiated, commingled, being used for a different purpose and performs a different function than seed. Seed has a much higher margin than grain *because* it is certified, tested and tracked. It would be impossible for CHS to implement a cost-effective or manageable system for handling a billion bushels of grain per year as if some small portion of that grain were seed to be used for planting.

II. Creating Additional Contract Rights Does Not Solve the Issue for Grain Elevators

Petitioner suggests that contract rights and remedies could adequately protect Monsanto's interest in "self-replicating" soybean technology. But Petitioner fails to explain what those contract rights would look like and how such contracts would impact the grain elevator at the point of delivery. When farmers deliver their harvested crops, grain elevators are not functioning as seed re-sellers as to that grain. Petitioner's contract argument is effectively asking all grain elevators to perform the function of seed labeling and seed certifying re-sellers at the intake point for commodity grain. This is contrary to how the

entire grain industry operates. The type of contract imagined by Petitioner would unreasonably impose on the grain industry all of the costs of seed labeling and seed certification with none of the benefit of increased sales margin. No reasonable elevator could agree to such a contract and no reasonable means of enforcement would exist.

CHS simply could not move a billion bushels of grain though its system and treat that grain as seed on a cost-effective basis. To force grain elevators to perform that function would jeopardize the entire grain marketing system. It is neither reasonable nor practical to ask CHS or any other elevator system to perform a different function, simply to preserve a growers desire to avoid patents and obtain "low cost" seed for planting.

III. Genetically Enhanced Seed Provides Benefits to Growers, Grain Elevators and Consumers

Seed companies like Monsanto invest billions of dollars annually in the research and development of genetically enhanced seed traits. The innovations and benefits brought about by this investment are significant. For example, the U.S. produces more than 12 billion bushels of corn per year.[13] The average yield

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[13] USDA Foreign Agricultural Services, Circular Series FG 01-13, Grain: World Markets, 20 (Jan. 2013), http://www.fas.usda.gov/psdonline/circulars/grain.pdf. The FAS data is listed in

(Continued on following page)

for corn per acre has increased from an average of 125 bushels per acre to 145 bushels per acre in the last fifteen years.[14] Genetic enhancements also reduce the use of pesticides and decrease input costs.[15] These benefits allow farmers to grow more with less. The increase in yield allows CHS to invest in its business, infrastructure and the communities in which it is located. Within the last five years CHS has invested over $150 million in infrastructure and increased capacity by 37 million bushels in order to serve the increasing output of U.S. farmers.

Petitioner's device of buying bin run soybeans containing Monsanto's Roundup Ready® trait takes value out of the cycle. Bin run grain can be purchased at less than half the cost per bag of certified seed. If this practice were incentivized as a legitimate end-run around the seed manufacturer's patents, and adopted on a more widespread basis, the disparity between certified seed sales by licensed retailers and the progeny of commodity seed would grow. In turn, investment in research and development becomes

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metric tons, demonstrating that the U.S. has produced in excess of 300 million metric tons of corn per year for the last three years. There are 39.4 bushels per metric ton of corn, meaning the U.S. produces approximately 12 billion bushels of corn per year.

[14] USDA National Agricultural Statistics Service, http://quickstats.nass.usda.gov/results/E5FC7E38-5DCF-3536-9F3E-4F2E74B59902?pivot=short_desc (last visited Jan. 21, 2013).

[15] Br. of *Amicus* Am. Soybean Ass'n, 24.

more costly and innovators are disinclined to making further investments.

Bin run grain is also a mix of different varieties, with different maturation rates and varying genetic traits. In the ordinary course, it is impossible to know what variety or which traits were planted from the commingled commodity grain. Commodity grain also contains a higher level of dirt and contaminates than would be permissible in a bag of certified seed. Over time, planting commodity, undifferentiated grain would result in a reduction in yield and varietal superiority.[16]

In sum, Petitioner's position causes a host of problems for other stakeholders in the distribution channel. If accepted, seed retailers would not be able to comply with seed certification laws, and over time, yield productivity and innovation would be impaired.

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[16] *See* Br. of *Amicus* Am. Seed Trade Ass'n, 8-9.

CONCLUSION

For the foregoing reasons, and for those in Respondents' brief, the Federal Circuit's judgment should be affirmed.

Respectfully submitted,

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AMICUS CURIAE BRIEF

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VERNON HUGH BOWMAN,
Petitioner,
v.
MONSANTO COMPANY, ET AL.,
Respondents.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF OF CROPLIFE AMERICA AS *AMICUS CURIAE* SUPPORTING AFFIRMANCE

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INTEREST OF *AMICUS CURIAE*[1]

CropLife America is the national voice of the agricultural crop protection industry. It represents the companies that develop, manufacture, and distribute virtually all crop protection and biotechnology products used by American farmers. CropLife America represents its members' interests by, *inter alia*, monitoring federal agency regulations and agency actions and related litigation to identify issues of concern to the crop protection and pest control industry, and participating in such actions when appropriate. Because many genetically engineered ("GE") crops are critical crop protection systems, CropLife America's members have an interest in proper resolution of the questions presented.

BACKGROUND

This case has enormous potential implications for American agriculture. Over the last decade, GE crops have become a mainstay of U.S. agriculture. Because of the significant economic and environmental benefits they confer, farmers and seed companies have invested heavily in those crops—which now account for over 85% of corn, soybean, cotton and sugarbeet crops planted domestically. To shed light on the possible effects of this Court's decision, *amicus* provides the

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[1] Pursuant to Supreme Court Rule 37.6, *amicus curiae* states that no counsel for any party authored this brief in whole or in part and that no entity or person, aside from *amicus curiae*, its members, and its counsel, made any monetary contribution toward the preparation or submission of this brief. Petitioner and Respondents have consented to the filing of this brief, as reflected in letters filed with the Clerk of Court.

following background on domestic cultivation of GE crops in general and soybeans, in particular, as well as the benefits conferred by GE crops and the costs associated with developing them.

A. Soybean Cultivation In The United States

The soybean is a legume prized for its protein content and nitrogen-fixing properties. Although native to East Asia, it is now the second-most cultivated crop in the United States (by acreage); each year approximately 75 million acres of soybeans are planted in this country, with an aggregate value ranging between $27 billion and $40.2 billion per year from 2007 to 2011.[2] The United States is the largest producer and exporter of soybeans in the world.[3]

When dealing in soybeans, "the crop is the seed" itself. *Asgrow Seed Co. v. Winterboer*, 513 U.S. 179, 188 (1995). That seed is fit for consumption by either livestock or humans (*e.g.*, edamame).[4] Or the seed can

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[2] *See* Economic Research Serv., USDA, *Soybeans & Oil Crops: Background*, http://www.ers.usda.gov/topics/crops/soybeans-oil-crops/background.aspx (last visited Jan. 22, 2013); Economic Research Serv., USDA, *Soybeans & Oil Crops: Related Data & Statistics*, http://www.ers.usda.gov/topics/crops/soybeans-oil-crops/related-data-statistics.aspx (last visited Jan. 22, 2013).

[3] *See* FAOSTAT, *Food and Agricultural Commodities Production*, http://faostat.fao.org/site/339/default.aspx (select "Country rank in the world, by commodity"; then select "United States of America") (last visited Jan. 22. 2013).

[4] *See, e.g.*, Mark Bittman, *Snacks Worth Their Salt*, N.Y. Times, Oct. 3, 2012, at D3, *available at* http://www.nytimes.com/2012/10/03/dining/how-to-cook-everything-edamame-snacks-that-are-simple-to-

be processed into countless varieties of food products, such as soy milk, soybean oil, baby formula, and tofu. And, as a seed, soybeans can of course be planted and cultivated into growing new soybean plants.

Soybeans are self-pollinating and shed pollen only at very short distances. JA-100a; "Soybean," *Encyclopaedia Britannica Online Library Edition*, Web 18 (2013). There is no evidence of unwanted cross-pollination from GE soybeans to conventional or organic soybeans. Unlike some other crops, soybean seeds can be saved and replanted without a significant decrease in yield as compared to the first generation. JA-100a.

Soybean farmers typically sell their soybeans either directly to a processor or to a grain elevator (which in turn sells the soybeans to processors). Resp. Br. at 6-7; BayhDole25, Inc. Amicus Br. at 7-12; *Asgrow*, 513 U.S. at 188. Grain elevators do not plant the seeds they buy and, outside of very rare circumstances—exemplified by this case—do not sell soybeans to farmers for replanting. Resp. Br. at 6 & n.6; BayhDole25, Inc. Amicus Br. at 7-12. Instead, grain elevators sell to companies and individuals interested in soybean seeds' value as food for consumption by humans or livestock.

This case involves Roundup Ready soybeans, a variety of soybean that has been genetically engineered for resistance to the herbicide glyphosate. JA-87. Roundup Ready soybeans are one of many GE crops planted in the U.S., which are quite popular due to the significant benefits they confer.

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make.html?_r=2&; "Soybean," *Encyclopaedia Britannica Online Library Editions*, Web 18 (2013).

B. The Benefits Of GE Crops

The vast majority of GE crops cultivated in the United States are so-called "first generation" GE crops, which have been engineered to have traits that confer resistance to herbicides or insects. These biotechnological innovations confer significant economic and environmental benefits.

1. The development of GE crops has yielded remarkable economic benefits. "In 2010, the direct global farm income benefit from biotech crops was $14 billion." Graham Brookes & Peter Barfoot, *The Income and production effects of biotech crops globally 1996-2010*, 3 GM Crops & Food: Biotechnology in Agric. & the Food Chain 265, 266 (2012). "Since 1996, farm incomes have increased $78.4 billion." *Id.* Roughly "[h]alf of this has been derived by farmers in developing countries." *Id.* at 271. In addition to those direct benefits, "[i]mportant non-pecuniary benefits have also been derived by many farmers, which in the case of US farmers added a further $7.6 billion to the farm income benefits derived from the technology." *Id.*

A substantial portion of those economic benefits is derived from herbicide-resistant soybeans—which are overwhelmingly the Roundup Ready variety at issue here. "HT [herbicide-tolerance] technology in soybeans has boosted farm incomes by $3.3 billion in 2010, and since 1996 has delivered over $28 billion of extra farm income (the highest cumulative increase in farm income of the biotech traits)." *Id.* at 267.

The economic benefits of GE crops radiate well beyond the owners of the relevant intellectual property. Of the $1.2 billion in economic benefits created by Roundup Ready soybeans in 2001, a full $652 million flowed to consumers "due to lower prices."

Greg Traxler, *The GMO experience in North and South America*, 2 Int'l J. Tech. & Globalization 46, 54 (2006). In addition, farmers "received net benefits of $152 million, and biotechnology and seed firms received $421 million as technology revenue." *Id.*

2. GE crops also provide substantial environmental benefits. They reduce fuel consumption, promote soil conservation, and reduce greenhouse gas emissions.

Herbicide-resistant crops greatly enhance farmers' ability to control weeds. As a result, farmers can typically apply herbicides less frequently and rely less on mechanical plowing.[5] The resulting environmental benefits are significant: "Over the period 1996 to 2010, the cumulative permanent reductions in fuel use has been about 12,232 million kg of carbon dioxide, arising from reduced fuel use of 4,582 million litres."[6] In 2010 alone, an estimated 1,715 million kilograms of carbon dioxide and 642.2 million liters of fuel was saved as a result of GE crops.[7] A significant majority of those savings—roughly 85%—"have come from the adoption of GM HT technology in soybeans," such as Roundup Ready soybeans.[8]

GE crops also promote soil conservation, which has been a critical priority of environmental policy since

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5 Graham Brookes & Peter Barfoot, *Global Impact of Biotech Crops: Environmental Effects, 1996-2010*, 3 GM Crops & Food: Biotechnology in Agric. & the Food Chain 129, 131-32 (2012).

6 *Id.*

7 *Id.* at 133, 131.

8 *Id.* at 131.

the Dust Bowl.[9] "The use of conservation tillage reduces soil erosion by wind and water, increases water retention, and reduces soil degradation and water and chemical runoff." Jorge Fernandez-Cornejo & Margriet Caswell, USDA, *The First Decade of Genetically Engineered Crops in the United States* 13 (2006), *available at* http://www.ers.usda.gov/media/255908/eib11_1_.pdf Farmers' adoption of "no-till" and "reduced-till" farming systems "ha[s] increased significantly with the adoption of GM HT crops because the GM HT technology has improved growers' ability to control competing weeds, reducing the need to rely on soil cultivation and seed-bed preparation as a means to getting good levels of weed control." Graham Brookes & Peter Barfoot, *Global Impact of Biotech Crops: Environmental Effects, 1996-2010*, 3 GM Crops & Food: Biotechnology in Agric. & the Food Chain 129, 132 (2012). "As a result, tractor fuel use for tillage is reduced, soil quality is enhanced and levels of soil erosion cut." *Id.*

This soil conservation also facilitates lower greenhouse gas emissions through carbon sequestration in soil: "more carbon remains in the soil and this leads to lower [greenhouse gas] emissions." *Id.* Through adoption of GE crops, "an extra 4,805 million kg of soil carbon is estimated to have been

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9 *See, e.g.*, Natural Resources Conservation Service, USDA, *Soil Health: Unlocking the Secrets in the Soil*, *available at* http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/soils/health/ (list visited Jan. 22, 2013) (explaining that soil conservation is of "paramount importance" and that "improving the health of our Nation's soil is one of the most important endeavors of our time").

sequestered," which is "equivalent to removing *7.84 million cars* from the roads." *Id.* (emphasis added).

Roundup Ready soybeans are particularly effective at promoting soil conservation: "According to USDA survey data, about 60 percent of the area planted with HT soybeans was under conservation tillage in 1997, compared with only about 40 percent of the acres planted with conventional soybeans." Fernandez-Cornejo, *supra*, at 13. "Differences in the use of no-till between adopters and nonadopters of HT soybeans are even more pronounced: 40 percent of acres planted with HT soybeans were under no-till, twice the corresponding share of acreage planted with conventional soybeans." *Id.*; *see also* Dan Towery & Steve Werblow, Conservation Technology Information Center, *Facilitating Conservation Farming Practices and Enhancing Environmental Sustainability with Agricultural Biotechnology* 1 (2010), *available at* http://www.ctic.org/BiotechSustainability (explaining "how plant biotechnology and the sustainable farming systems it helps facilitate ... are helping farmers grow more food, feed, fiber and fuel while protecting the environment").

3. Nearly all of these benefits have been derived from first-generation GE traits that convey herbicide or insect resistance. More recently, crops with new GE traits have become commercially available or are nearing approval. For example, as explained in a recent White House report, "in December 2011, drought tolerant corn was approved by the USDA, and strategies to improve other crops for drought-tolerance

are underway."[10] "Biotechnology advancements combined with breeding techniques are expected in the near future to lead to crops with other desirable traits such as improved nutritional value, enhanced disease resistance, and higher crop yields."[11] That same report concluded that biotechnological research may yield even greater, transformative gains: "As research moves beyond the biotechnology and breeding techniques of today, an increased understanding of biodiversity and food crops as ecosystems has the potential to transform the management and practice of agriculture and move this mainstay of the bioeconomy to a new level."[12]

C. Industry Investment In GE Crops

Because of the significant economic and environmental benefits that GE crops confer, they have enjoyed remarkable popularity with farmers in the U.S., notwithstanding licensing fees. In 2012, for example, 88% of domestic corn (the largest crop in the U.S.) consisted of GE varieties.[13] Similarly, more than 90% of cotton and sugarbeets grown domestically are genetically engineered.[14] And GE soybeans, first

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10 White House, *National Bioeconomy Blueprint* 11 (2012), *available at* http://www.whitehouse.gov/sites/default/files/microsites/ostp/national_bioeconomy_blueprint_april_2012.pdf.

11 *Id.*

12 *Id.*

13 *See* Economic Research Service, USDA, *Genetically engineered (GE) corn varieties by State and United States 2000-2011*, http://www.ers.usda.gov/Data/BiotechCrops/alltables.xls.

14 *Id.*; Western Farm Press, *Roundup Ready sugar beets get USDA approval for spring planting*, Feb. 4, 2011, *available at*

commercialized in 1996, now account for 93% of all soybeans planted in the U.S.[15]

Most GE crops are grown pursuant to a license between the farmer and the owner of the relevant intellectual property. *E.g.*, Fed. Cir. Joint Appendix at A-282. Such a license typically provides that the farmer will pay a patent royalty, usually in the form of a "technology fee." JA-40. Those licenses also contain other restrictions, such as requiring stewardship measures to address potential development of resistance to herbicides in weeds.[16] The licenses for Roundup Ready soybeans at issue here notably include an explicit prohibition against saving seed for replanting and cultivation of a second generation. JA-40, 126-27.

Unlocking the benefits of GE crops is not an inexpensive endeavor. The development of GE crops is a product of an important long-term trend in agriculture: the massive increase in private investment in agricultural research and development. As USDA has explained, over the last few decades "R&D expenditures on plant breeding for many major crops shifted from mainly public to mainly private" as "[p]rivate spending on crop variety R&D increased *fourteenfold* between 1960 and 1996 (adjusted for inflation), while public expenditures changed little."

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http://westernfarmpress.com/government/roundup-ready-sugar-beets-get-usda-approval-spring-planting.

15 *See* Economic Research Service, USDA, *Genetically engineered (GE) corn varieties by State and United States 2000-2011*, http://www.ers.usda.gov/Data/BiotechCrops/alltables.xls.

16 *See* Monsanto, *U.S. Technology Use Guide*, *available at* http://www.genuity.com/stewardship/Documents/TUG.pdf.

Fernandez-Cornejo, *supra*, at 2 (emphasis added); *see also* GianCarlo Moschini, Iowa State Univ. Dep't of Economics, *Competition Issues in the Seed Industry and the Role of Intellectual Property* Working Paper No. 10015, at 1 (2010) ("[I]n agriculture, private R&D has exceeded public R&D expenditures since the early 1980s.").

USDA has further explained that this substantial increase in private investment was the result of "[s]trengthening of intellectual property rights protection in the 1970s and 1980s [that] increased returns to research and offered greater incentives for private companies to invest in seed development and crop biotechnology." Fernandez-Cornejo, *supra*, at iii; *see also* Moschini, *supra*, at 2 ("[P]atent protection is now available on many aspects of seed production, including GM traits and varieties, and that has tremendously enlarged the scope of profitable private R&D investments in the seed industry."). As Petitioner notes, that strengthening of intellectual property includes "case law since the 1980s holding that sexually reproducing plants qualify for utility patent protection." *See* Pet. Br. at 52 (citing *Ex parte Hibberd*, 227 U.S.P.Q. 443, 444-46 (B.P.A.I. 1985)).

That substantial increase in investment was driven in part by the relatively high research and development costs associated with creating new GE crops. Fernandez-Cornejo, *supra*, at 2; Moschini, *supra*, at 1-2; Resp. Br. at 32-33. On average, a new GE trait requires an investment of $136 million and requires more than 13 years to develop and

commercialize.[17] It is doubtful that private industry would have made these long-term, substantial investments in agricultural research absent a high degree of confidence in their ability to enforce substantial intellectual property rights in those innovations. Moschini, *supra*, at 1-4.

SUMMARY OF ARGUMENT

In the decision below, the Federal Circuit held that the authorized sale of a patented article exhausts the patentee's property interest in that *specific article*, but does not convey any right to make *new copies*. That holding is consistent with this Court's decisions from the mid-nineteenth century through today. Petitioner's invitation to depart from these precedents in order to create a special rule for—in Petitioner's words—inventions that are "self-replicating"—should be rejected.

I. For 140 years, this Court has consistently emphasized that patent exhaustion applies only to the *specific* article that has been the subject of an authorized sale. This Court has been equally clear that an authorized sale of an article does not authorize the buyer to *reproduce* the patented article.

Petitioner's characterization of the seeds at issue as "self-replicating" is a misnomer. The GE soybean seeds at issue here do not plant, cultivate, and harvest themselves. In any event, the level of intellectual property protection conveyed by patent law has never turned on the ease with which an article can be copied.

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17 *See* CropLife Int'l, *Study: Cost of Bringing a Biotech Crop to Market*, http://www.croplife.org/PhillipsMcDougallStudy (last visited Jan. 22, 2013).

B. This Court's decisions in *Asgrow* and *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124 (2001), further support the Federal Circuit's judgment that the authorized sale of a first-generation seeds does not exhaust the patentees' rights in progeny seeds. In *Asgrow*, this Court granted certiorari to address the scope of the seed-saving provision of the Plant Variety Protection Act (PVPA). That question would have been purely academic if Petitioner's view were correct, because the respondents in *Asgrow* would have prevailed on exhaustion grounds. And in *J.E.M.*, this Court expressly stated that the Patent Act conveys "greater rights of exclusion" than the PVPA—a rationale that is squarely at odds with Petitioner's argument. 534 U.S. at 143.

C. Congress has ratified the Federal Circuit's interpretation of the patent exhaustion doctrine, as well as this Court's holdings in *Asgrow* and *J.E.M.* Congress is presumed to have been aware of those decisions, and to have adopted their holdings, when it made significant changes to the Patent Act in 2011, while leaving the patent exhaustion doctrine untouched.

Congress's enactment of the seed-saving exemption in the PVPA is further evidence that it agrees with the Federal Circuit's view. If, as Petitioner contends, the authorized sale of first-generation seeds exhausted intellectual property rights in subsequent generations, the seed-saving exemption—which allows a farmer to save seed for replanting and sale in specified circumstances—would be entirely superfluous.

D. Contrary to Petitioner's suggestion, neither *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008), nor *United States v. Univis Lens Co.*,

316 U.S. 241 (1942), undermines the judgment below. Neither case casts any doubt on the longstanding rule that even the lawful owner of a patented article may not use it to create another copy of the patented article. *Quanta* and *Univis* are, in any event, inapposite because the Court relied in both cases on the fact that the patented articles at issue had only one "reasonable and intended" use—incorporation into a patented invention. But soybean seeds have beneficial uses aside from their ability to reproduce.

II. Petitioner's proposed rule would also be profoundly unwise as a matter of policy. It would drastically weaken the incentive to develop new crop protection technologies, substantially frustrating the innovation-promoting purpose of the Patent Act. Adoption of Petitioner's position would also cause enormous disruption in the agricultural industry, which has for more than a decade relied on the Federal Circuit's holding that the authorized sale of a first-generation seed does not exhaust patent rights in progeny seeds. Any change to the patent exhaustion doctrine as applied to technologies like GE seeds should be left to Congress.

ARGUMENT

I. THE FEDERAL CIRCUIT CORRECTLY HELD THAT AN AUTHORIZED SALE OF A FIRST-GENERATION GE SEED DOES NOT EXHAUST THE PATENTEE'S RIGHTS IN SUBSEQUENT GENERATIONS OF SEED

A. The Federal Circuit's Holding Follows Directly From This Court's Precedents

For 140 years, this Court has consistently emphasized that patent exhaustion applies only to the *specific* article that has been the subject of an authorized sale and does *not* authorize the purchaser to cause the reproduction of that article. The Federal Circuit correctly recognized that this settled principle of patent law controls here. Petitioner infringed Respondents' patents by intentionally making patented progeny seeds through planting and cultivation, and using and selling those seeds in a manner not permitted by any license.

As Respondents and the United States explain, this Court has repeatedly and steadfastly limited the patent exhaustion doctrine to the specific article that has been sold. U.S. Br. at 9-10; Resp. Br. at 15-17. Beginning with *Adams v. Burke*, this Court stressed that the sale of a patented item "carries with it the right to the use of *that machine*." 84 U.S. (17 Wall.) 453, 455 (1873) (emphasis added)). *Adams* further explained that by making an authorized sale of a patented article, the patent holder has "received all the royalty or consideration which he claims for the use of his invention in *that particular machine or instrument*." *Id.* at 456 (emphasis added). This Court's precedents in

the fourteen decades since *Adams* are entirely consistent with that bright-line rule. *See, e.g., Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617, 625 (2008) ("[T]he initial authorized sale of a patented item terminates all patent rights *to that item*." (emphasis added)); *United States v. Univis Lens Co.*, 316 U.S. 241, 251 (1942) (holding that an authorized sale exhausts patent rights "so far as [the patent] is or may be embodied in *that particular article*." (emphasis added)); *United States v. Gen. Elec. Co.*, 272 U.S. 476, 489 (1926) (sale of an article exhausts patent holder's rights "with *the article* after his purchase" (emphasis added)); *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 516 (1917) ("*[T]he article sold* [is] thereby carried outside the monopoly of the patent law." (emphasis added)); *Bauer & Cie v. O'Donnell*, 229 U.S. 1, 17 (1913) (holding that "a patentee who has parted with a patented machine by passing title to a purchaser has placed *the article* beyond the limits of the monopoly [conferred by patent law]" (emphasis added)).

This Court has been equally clear that an authorized sale of an article does not authorize the buyer to *reproduce* the patented article. *See, e.g., Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 346 (1961) (purchaser of a patented item does not acquire any right to make a "second creation of the patented entity"); *Bloomer v. McQuewan*, 55 U.S. (14 How.) 539, 549 (1853) (explaining that "the distinction ... between the grant of the *right to make* and vend the machine, and the grant of the *right to use* it" is a "plain one" (emphasis added)); *Mitchell v. Hawley*, 83 U.S. (16 Wall.) 544, 548 (1873) (purchaser of a patented article "does not acquire any right to construct another

machine"); *see also American Cotton-Tie Co. v. Simmons*, 106 U.S. 89, 93-94 (1882) ("Whatever right the [purchasers] could acquire to the use of the old buckle, they acquired no right to combine it with a substantially new band, to make a cotton-bale tie.").

Petitioner urges this Court to depart from this longstanding distinction between the patentee's rights in the article actually sold and its rights in new copies of the article—which has prevailed for nearly a century and a half. Petitioner's theory appears to be that a different rule ought to apply to so-called "self-replicating" inventions. Pet. Br. at 14-17, 34-44. As Respondents (at 23) and the United States (at 26-27) correctly observe, however, that characterization badly misconceives the nature of soybean cultivation, which requires significant human intervention for its success. Seeds do not plant themselves, apply glyphosate to themselves to kill competing plants (*i.e.*, weeds), or perform any of the other essential steps in cultivation that must be performed by human beings in order to cause the successful reproduction of the seed.

Stripped of its mistaken premise, the distinction urged by Petitioner boils down to a contention that a different exhaustion rule is required where, as here, the patented item is more easily replicable than some other inventions. But the level of intellectual-property protection afforded to an invention has never turned on the ease with which it may be copied. And such a regime would have broad implications well beyond GE technologies. *Cf. Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437, 453-54 (2007) ("Copying software ... is indeed easy and inexpensive. But the same could be said of other items: '... chemical or biological substances might be created by reproduction ....'" (citation omitted)).

B. This Court's Decisions In *Asgrow* And *J.E.M.* Support The Federal Circuit's Holding

This Court's decisions in *Asgrow Seed Co. v. Winterboer*, 513 U.S. 179 (1995), and *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc.*, 534 U.S. 124 (2001), further support the Federal Circuit's holding that an authorized sale exhausts the patentee's rights only as to the specific seeds sold, and does not exhaust patent rights in subsequent generations of seeds.

In *Asgrow*, this Court granted certiorari to resolve the scope of the seed-saving exemption in the Plant Variety Protection Act of 1970. The PVPA extends patent-like protection to novel varieties of plants grown from seed. It contains an explicit exemption, however, that allows a farmer to "save seed ... and use such saved seed in the production of a crop for use on his farm, or for sale," in specified circumstances. 7 U.S.C. § 2543. This Court held that a farmer who meets the requirements set forth in § 2543 may sell, for reproductive purposes, only such seed as he has saved for the purpose of replanting his own acreage. *See* 513 U.S. at 190-91.

If Petitioner's theory of exhaustion were correct, the question presented in *Asgrow* would have been a purely academic one. Under Petitioner's theory, the initial sale of the first-generation GE soybean seeds in this case exhausted the intellectual property rights in that seed *and* all subsequent progeny seeds. Petitioner offers no persuasive reason why the exhaustion rule—which is derived from general common-law property principles that are not unique to patented goods—would be different under the PVPA. Under that rule,

the respondents in *Asgrow* could have prevailed on exhaustion grounds—without any need to rely on the PVPA's seed-saving exemption.

This Court's decision in *J.E.M.*, also supports the Federal Circuit's judgment here. In *J.E.M.*, this Court addressed whether plants could be protected under the Patent Act or, rather, whether the PVPA and a related statute were "the exclusive means of obtaining a federal statutory right to exclude others from reproducing, selling, or using plants or plant varieties." 534 U.S. at 127.

In reconciling the PVPA and the Patent Act, this Court reasoned that "utility patent holders receive *greater* rights of exclusion" than PVP certificate holders. *Id.* at 143 (emphasis added); *accord id.* at 142 ("[T]he protections afforded by a utility patent are *greater* than those afforded by a PVP certificate.") (emphasis added). That conclusion was based in part on the fact that "it is harder to qualify for a utility patent than for a Plant Variety Protection (PVP) certificate, [so] it only makes sense that utility patents would confer a *greater* scope of protection." *Id.* at 138 (emphasis added). To illustrate the point, the Court explained that while "the PVPA provides exemptions for research and for farmers to save seed from their crops for replanting[,] [u]tility patents issued for plants do not contain such exemptions." *Id.* at 129 n.1; *accord id.* at 143 (noting that there is no "exemption[] for ... saving seed under a utility patent"); *id.* at 140 ("The utility patent statute does not contain similar exemptions.").

Petitioner's arguments are irreconcilable with this core aspect of *J.E.M.*'s reasoning. Owners of utility patents in plants certainly would not have "greater

rights of exclusion" under his proposed rule; instead, there would be a blanket extinguishment of patent rights in subsequent generations of seeds. Adoption of Petitioner's proposed rule would thus undermine this Court's holding in *J.E.M.*

The Federal Circuit has correctly recognized as much, relying on *J.E.M.* and other decisions of this Court for more than a decade in holding that an authorized sale of a first-generation GE seed does not exhaust the patentee's rights in progeny seeds. *See, e.g., Monsanto Co. v. McFarling*, 302 F.3d 1291 (Fed. Cir. 2002), *cert. denied*, 537 U.S. 1232, 1299 (2003) ("The 'first sale' doctrine of exhaustion of the patent right is not implicated, as the new seeds grown from the original batch had never been sold."); *Monsanto Co. v. Scruggs*, 459 F.3d 1328, 1335-36 (Fed. Cir. 2006), *cert. denied*, 549 U.S. 1342 (2007).

C. Congress Has Ratified This Court's And The Federal Circuit's Decisions

1. Against this backdrop of judicial decisions, in 2011 Congress effected "comprehensive patent reform" by enacting the America Invents Act, Pub. L. No. 112-29 (2011). *Ass'n for Molecular Pathology v. U.S. PTO*, 689 F.3d 1303, 1330-31 (Fed. Cir. 2012), *cert. granted in part*, 133 S. Ct. 694 (2012). But Congress notably left patent exhaustion principles untouched.

Congress is presumed to have been aware of the relevant decisions of this Court and the Federal Circuit, and to have adopted their holdings, when it re-enacted the Patent Act with substantial changes leaving the patent exhaustion doctrine untouched. *See, e.g., Bruesewitz v. Wyeth LLC*, 131 S. Ct. 1068, 1082 (2011) ("When 'all (or nearly all) of the' relevant judicial

decisions have given a term or concept a consistent judicial gloss, we presume Congress intended the term or concept to have that meaning when it incorporated it into a later-enacted statute." (citation omitted)); *Lorillard, Div. of Loew's Theatres, Inc. v. Pons*, 434 U.S. 575, 581 (1978). It is also "'realistic to presume that Congress ... expect[s] [the Act] to be interpreted in conformity with'" this Court's decisions, including *Asgrow* and *J.E.M.* *See North Star Steel Co. v. Thomas*, 515 U.S. 29, 34 (1995) (quoting *Cannon v. Univ. of Chi.*, 441 U.S. 677, 699 (1979)).

2. Congress's enactment of the PVPA is also instructive of its intent regarding exhaustion principles. If Congress agreed with Petitioner's view, there would have been no need for it to enact an *exemption* for personal seed saving. Congress's enactment of the PVPA's seed-saving provision (and subsequent inaction after *Asgrow*) indicates that Congress understood that the authorized sale of first-generation seeds would not exhaust intellectual property rights in subsequent generations of seeds. *See, e.g., TRW Inc. v. Andrews*, 534 U.S. 19, 31 (2001) ("It is 'a cardinal principle of statutory construction' that 'a statute ought, upon the whole, to be so construed that, if it can be prevented, no clause, sentence, or word shall be superfluous, void, or insignificant.'" (citation omitted)).

D. Neither *Quanta* Nor *Univis* Casts Doubt On The Federal Circuit's Holding

Relying on *Quanta* and *Univis*, Petitioner argues (at 35-37) that the initial sale of any patented seeds necessarily exhausts the patentee's rights in all

subsequent generations of seeds. Petitioner's reliance on these cases is misplaced, for several reasons.

First, as the United States explains, *Quanta* addressed exhaustion of method patents, and its analysis cannot be translated uncritically to the patents at issue here. *See* U.S. Br. at 20.

Second, the Court in *Quanta* applied the well-established exhaustion rule to an "incomplete article" acquired through an authorized sale, because that article "substantially embodie[d]" the method patent at issue. 553 U.S. at 633. But it is equally well established that even the lawful owner of a patented article may not, without a license, use that article to *make* another iteration of the patented article. Nothing in *Quanta* or *Univis* casts doubt on that well-settled proposition.

Finally, in both *Quanta* and *Univis*, this Court relied in significant part on the fact—not present here—that the sold article had no value apart from its use as a substantial component of a patented article. In *Univis*, for example, "the only object of the sale [of the lens blanks was] to enable the [finishing retailer] to grind and polish it for use as a lens by the prospective wearer." 316 U.S. at 249; *see also Quanta*, 553 U.S. at 627-28 (explaining that in *Univis* the "*only* and intended use [of the lens blanks was] to be finished under the terms of the patent" (emphasis added)); *id.* at 631 (explaining that lens blanks' "only reasonable and intended use was to practice the patent"). Similarly, the only value of the computer component in *Quanta* was derived from its intended use as a component in the computer chips. *See Quanta*, 553 U.S. at 632 ("Here, LGE has suggested no reasonable use for the Intel Products other than incorporating them into

computer systems that practice the LGE Patents. Nor can we discern one: A microprocessor or chipset cannot function until it is connected to buses and memory." (footnote omitted)); *id.* ("[H]ere, as in *Univis*, the only apparent object of Intel's sales to Quanta was to permit Quanta to incorporate the Intel Products into computers that would practice the patents.").

Unlike the lens blanks in *Univis* and the computer components at issue in *Quanta*, soybean seeds *do* have a reasonable use wholly apart from their ability to be reproduced through planting and cultivation. As explained above, there is a robust market for soybean seeds to be consumed as food by humans or livestock. *Supra* at 2-3. The very existence of grain elevators is persuasive evidence that soybean seeds have significant value independent of their reproductive capacity. Grain elevators exist in order to purchase soybean seeds from farmers for subsequent sale to parties that value soybean seeds' usefulness as *food*. Resp. Br. at 6-7; BayhDole25, Inc. Amicus Br. at 7-12. Absent those beneficial uses of soybean seeds, the seeds' reproductive capacity would have little, if any, value. U.S. Br. at 21.

Even if selling soybeans would, in ordinary situations, convey an *implied license* for the purchaser to plant them and harvest a second generation, there is no reason to adopt a rigid exhaustion rule that would effectively force such a license by operation of law, limiting freedom of contract. Soybeans have other commercially reasonable uses, and some purchasers may not want to pay the associated price of a license to plant and cultivate progeny seeds. Petitioner's proposed rule would make it impossible to sell patented agricultural products at a different prices to purchasers

who intend to eat them, on the one hand , and purchasers who intend to replicate the seeds *ad infinitum* for resale, on the other.

II. PETITIONER'S RULE WOULD UNDERMINE INNOVATION AND INFLICT ENORMOUS COSTS ON THE INDUSTRY

Petitioner's proposed rule is not just inconsistent with more than a century of precedent, ratified by Congress—it would also be remarkably bad policy. Extending exhaustion to progeny generations would both undermine the incentive to innovate new technologies and have significant disruptive effects on an industry that has invested enormous resources in reliance on the existing doctrine.

A. Petitioner's Proposed Rule Would Dampen The Incentive To Develop New Crop Protection Technologies, As Well As Readily Replicable Technologies In Other Industries

In addition to conflicting with this Court's precedents interpreting the Patent Act, Petitioner's proposed rule of exhaustion also clashes with the Patent Act's purpose: to promote technological innovation. *See, e.g., Diamond v. Chakrabarty*, 447 U.S. 303, 307 (1980) ("The patent laws promote ... progress by offering inventors exclusive rights for a limited period as an incentive for their inventiveness and research efforts."). Petitioner's argument would dramatically thwart that objective for easily replicable technologies generally and GE crops specifically.

If Petitioner's rule had prevailed in the 1980s and 1990s, it is doubtful that Roundup Ready soybeans—or many other varieties of GE crops—would exist today.

As USDA has observed, the increased private investment in agricultural research that culminated in the development of GE crops is directly tied to the intellectual property protections that Petitioner would eviscerate. *Supra* at 9-10. Because the costs of developing a new GE trait typically exceed $100 million, *supra* at 10-11, innovators require, as a practical matter, multiple generations of sales to recover their investments. On Petitioner's view, a developer and patentee of a new GE trait (or, for that matter, any other readily replicable innovation) must recover its investment, if at all, in the first generation of commercial sales—after which progeny articles could be freely reproduced and sold by first-generation purchasers without licensing fees or other limitations. In that universe, there would be little incentive for future innovation, and many of the reasonably anticipated benefits from second or third generations of existing GE crops may be lost: an economically rational innovator would abandon the development of a new GE crop unless the remaining marginal costs of developing the crop and bringing it to market were predictably less than the royalties they would recover from the sale of a single generation.[18]

Moreover, the mischief of Petitioner's proposed rule could easily spread beyond the agricultural realm.

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[18] Petitioner suggests (at 53-55) that innovators could obtain some limited protection for GE crop inventions through the PVPA. But as discussed above, Petitioner fails to identify why the same exhaustion principles would not also apply under the PVPA. *See supra* at 17-18. In any event, Petitioner concedes that the PVPA provides lesser intellectual property protection to innovators and thus unquestionably diminishes the incentive to innovate.

Many other inventions are readily replicable—and indeed, can be replicated with less human intervention or effort than plant life. The harm to innovation is thus unlikely to be confined to the agricultural industry and instead could have ripple effects on countless other industries.

B. Adoption Of Petitioner's Theory Would Cause Dramatic Disruption To The U.S. Agricultural Industry

Petitioner's proposed rule of exhaustion would cause dramatic upheaval in the agricultural industry, upending at least a decade of reasonable reliance on the Federal Circuit's interpretation.

GE crops have enjoyed widespread popularity with farmers and now occupy tens of millions of planted acres in this country and extraordinarily high market share. *Supra* at 8-9. In 2002, GE market shares of soybeans, corn, and cotton were 75%, 34%, and 71%, respectively. *Supra* at 8 n.13. At that time, the intellectual property value of progeny seeds was sufficiently obvious that the market could command—and receive—licensing fees on subsequent generations of seeds. Following the Federal Circuit's 2002 ruling in *McFarling*, market shares for GE crops only continued to grow—to 93%, 88%, and 94% in 2012 for soybeans, corn, and cotton, respectively. During that time, innovators, seed companies, and farmers all relied on prevailing law and practice in making investment and planting decisions. Given that extensive reliance, sudden adoption of Petitioner's proposed rule would cause significant disruption within the agricultural industry.

There is not the slightest shred of evidence that Congress intended such a disruptive outcome. Quite the contrary: Congress's long silence, followed by its enactment of landmark patent reform, while leaving exhaustion doctrine untouched, is strong evidence that no such disruption was intended. *See Edmonds v. Compagnie Generale Transatlantique*, 443 U.S. 256, 266-67 (1979) ("[S]ilence is most eloquent, for such reticence while contemplating an important and controversial change in existing law is unlikely."); *see also Jones v. United States*, 526 U.S. 227, 234 (1999) (It is a "fair assumption that Congress is unlikely to intend any radical departures from past practice without making a point of saying so."); *supra* at 19-20. Any future change to the patent exhaustion doctrine ought to be squarely the prerogative of Congress.

CONCLUSION

The judgment of the Federal Circuit should be affirmed.

Respectfully submitted,

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AMICUS CURIAE BRIEF

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AND
BRIEFS

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IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN,
Petitioner,

v.

MONSANTO COMPANY, *et al.*,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

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IN THE

Supreme Court of the United States

NO. 11-796

VERNON HUGH BOWMAN,
Petitioner,

v.

MONSANTO COMPANY, *et al.*,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF FOR *AMICUS CURIAE* CROPLIFE INTERNATIONAL SUPPORTING RESPONDENTS

INTEREST OF *AMICUS CURIAE*[1]

CropLife International (CropLife) is a global federation representing the plant science industry and a network of regional and national associations in 91 countries. CropLife also has company members, including BASF, Bayer CropScience, Dow AgroSciences, DuPont-Pioneer,

[1] Pursuant to this Court's Rule 37.6, *amicus* affirms that no counsel for a party authored this brief in whole or in part, that no such counsel or party made a monetary contribution intended to fund the preparation or submission of this brief, and that no person or persons other than *amicus* and its counsel made such a monetary contribution. Petitioner's and respondents' letters consenting to the filing of all *amicus* briefs are on file with the Clerk's office.

FMC, Monsanto, Sumitomo, and Syngenta.[2] These companies are committed to sustainable agriculture through innovative research and development in the areas of crop protection, pest control, and seed and plant technologies.

Among the innovative products provided by CropLife member companies are seeds and plants that, unlike any found in nature, have been bioengineered or bred to have one or more novel properties. Such plants increase yields and decrease the use of pesticides, herbicides, water, and nutrients. This benefits the environment, farmers, and the public. Consumers gain from commercialized products made from such plants, which can be bred to contain healthier oils and exhibit other salutary features. Increased production of scarce resources is of self-evident benefit, especially in countries experiencing deprivation. To recoup the investments made in these research and development efforts, CropLife's member companies rely on the exclusivity afforded by patents.

SUMMARY OF ARGUMENT

At great cost and inventive effort, Monsanto genetically engineered soy beans (the seeds of soy plants) to contain the trait of herbicide resistance—an extremely valuable trait that does not naturally occur in soy. This Court should affirm the Federal Circuit's judgment that patent exhaustion does not bar Monsanto from holding Bowman liable for making copies of Monsanto's patented seed.

1. Commodity soy beans are generally an undifferentiated, heterogeneous mixture of beans from farms across a region. Bowman purchased such beans at a grain elevator, hoping and expecting that a large proportion of them would be patented seeds possessing the herbicide-resistance trait. He planted them and cultivated

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[2] Monsanto has been recused from internal participation in the preparation of CropLife's brief. See *supra* n.1.

resulting herbicide-resistant soy plants that bore herbicide-resistant seeds. In so doing, he produced a new generation of patented seeds containing the herbicide-resistance trait—an impermissible act of infringement. This "making" contravened 35 U.S.C. § 271(a) and was beyond the reach of the doctrine of exhaustion.

The patent-law concept of "making" has been a staple of American law since 1790. It is not a term of art, but bears its plain and ordinary meaning, see *Bauer & Cie* v. *O'Donnell*, 229 U.S. 1, 10 (1913), which comfortably embraces the concepts of "bringing about" or "causing." Bowman himself acknowledges that he engaged in at least such acts when he cultivated herbicide-resistant soy plants from commodity beans and caused those plants to generate a new generation of herbicide-resistant seeds. No precedent suggests a more restrictive definition of "making" that would exclude Bowman's conduct.

Bowman's escape hatch is to point to the plants grown from those beans, saying that *they*, and not Bowman himself, engaged in a "making." But that strained argument, which would deprive Monsanto of its basic patent right to bring claims for direct infringement, cannot immunize Bowman. Even if that distinction were recognized, Bowman would still be liable for direct infringement under agency-and-instrumentality law. The acts of beans and plants under Bowman's control must be imputed to Bowman.

Bowman also claims that Monsanto should be limited to alleging induced and contributory infringement under § 271(b)-(c), which has more elements (like scienter) than § 271(a) and is therefore easier to defeat. There is no good reason to uniquely limit patentees like Monsanto to this subsidiary cause of action. Monsanto, like any other patentee, should be able to recover for direct infringement.

2. Settled jurisprudence justifies affirming the judgment below, but policy considerations support that result just as strongly. Were acts like Bowman's beyond a patent's reach, patentees—such as CropLife's member companies—would face diminished incentives to develop valuable and extraordinary agricultural advancements and, in turn, bring them to market. And even if they did proceed to develop such advancements, if their patent rights could be bypassed, patentees would have little alternative to charging prohibitively high prices for them to adequately recover the costs associated with developing and bringing them to market. These advancements, many of which take the form of seeds and plants engineered or bred to contain desirable, heritable traits, are critically important. They not only help meet our ever-expanding population's needs for food, fuel, and clothing, but, being "green technologies," they also significantly reduce the environmental footprint associated with traditional farming practices.

Against such weighty interests, Bowman and his *amici* raise paltry concerns that are easily refuted. There is no risk of inefficiency, inconsistency, or inequity arising from the judgment upheld by the Federal Circuit. But there is a guarantee of such adverse consequences if that judgment is reversed.

ARGUMENT

Law and policy coincide in this case: both militate against treating Bowman's actions as mere uses that are shielded by the patent-exhaustion doctrine. Bioengineered seeds capable of replication are expensive and valuable inventions, which are no less entitled to patent protection than any other.

I. THE UNAUTHORIZED PRODUCTION OF SEEDS FROM PROGENY SEEDS IS A "MAKING" OF A PATENTED PRODUCT NOT SUBJECT TO PATENT EXHAUSTION

This case asks whether the authorized sale of a patented seed—that is, a sale by the patentee or its licensees[3]—exhausts the patentee's right to hold liable for patent infringement anyone who plants progeny[4] of that seed and produces, or "makes," yet another generation of patented seeds. The Federal Circuit concluded that exhaustion does not reach such activities, cautioning that a contrary holding would "eviscerat[e]" the rights of patent holders like Monsanto. Pet. App. 14a.

A. Monsanto's patented seed constitutes a valuable invention worthy of patent protection

How the soy beans at issue here differ from ordinary soy beans is crucial to this case. Monsanto's soy beans do not occur in nature, but are the product of human invention. Using recombinant DNA techniques, Monsanto altered the natural genetic make-up of the soy bean so as to impart a novel and heritable trait to it. This is analogous to the way the bacteria of *Diamond* v. *Chakrabarty*, 447 U.S. 303 (1980), had been engineered via human intervention to have "oil-eating" properties.

Specifically, Monsanto's patented seed is genetically modified to contain foreign bacterial DNA. The DNA expresses a foreign bacterial enzyme that confers gly-

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[3] This phrase is intended to refer to other seed dealers that have been licensed by Monsanto to sell the patented seed. Putting aside the issue of whether the grain-elevator operator that Bowman dealt with engaged in an "authorized" sale when it sold the commodity beans to Bowman, that entity is not a licensed seed dealer, but simply a grain-elevator operator.

[4] For purposes of this brief, "first-generation seeds" refers to the patented seeds sold by Monsanto and its licensees, and any and all descendants of such seeds shall be referred to as "progeny" seeds.

phosate resistance to soy plants. Glyphosate is the active agent in common herbicides, and resistance to glyphosate is a trait that soy beans found in nature do not possess. As a result, fields containing such soy plants (and which are also naturally infested with undesirable weeds or the remnants of a prior crop-planting) can be treated with glyphosate herbicide so as to selectively kill off everything except the glyphosate herbicide-resistant soy plants. See Pet. App. 4a.[5]

B. Bowman engaged in an unauthorized "making"

The Patent Act provides that

> [e]xcept as otherwise provided in [the Act], whoever without authority makes * * * any patented invention, within the United States * * * during the term of the patent therefor, infringes the patent.

35 U.S.C. § 271(a). Because Bowman engaged in a "making" without authority, he infringed Monsanto's patents. The judgment below should be affirmed.

1. *The word "making" in § 271(a) takes its ordinary meaning—"to bring about" or "cause to be"*

The term "make" has appeared in federal patent law since the beginning. It appeared in the very first Patent Act of 1790, ch. 7, § 1, 1 Stat. 109, 110 (granting the pat-

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[5] Genetic engineering is also used to impart to seeds and their derivative products traits other than herbicide resistance. Resistance to pests and harsh environmental conditions, improved product shelf life, and increased nutritional value are notable examples. This case, therefore, holds in the balance the extent to which a patent can control the propagation of *all* patented genetically-modified seeds, and its ruling will have far-reaching implications for how society can respond to the increasing demands of feeding, fueling, and clothing its ever-growing population and protecting our fragile environment. See *infra* Part II.A, C.

entee, "for any term not exceeding fourteen years, the sole and exclusive right and liberty of making * * * the said invention or discovery").[6]

The question, then, is what that key word means as used in the Act. The answer is that it conveys the plain and ordinary meaning of the word. As this Court put it a hundred years ago, "[t]he right to make can scarcely be made plainer by definition." *Bauer & Cie* v. *O'Donnell*, 229 U.S. 1, 10 (1913). Indeed, absent some contrary indication, *any* term in the Patent Act is presumed to carry its ordinary, contemporary, and common meaning. *Bilski* v. *Kappos*, 130 S. Ct. 3218, 3225-3226 (2010).

And from the time of the first Patent Act up to the present, the ordinary meaning of "make" has encompassed the notion of "bringing about" or "causing to happen." Dr. Johnson's famous dictionary defines "make" as "[t]o create," and "[t]o produce as the agent." S. Johnson, A Dictionary of the English Language 1246 (1755). Both of those meanings encapsulate Bowman's conduct in this case. Moreover, the meaning has remained static over the centuries, as the leading dictionary at the time of the Patent Act's current codification shows. See Webster's New International Dictionary 1485 (2d ed. 1957) ("[t]o form or fashion" or "[t]o cause to exist").[7] Accord

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[6] The term subsequently appeared in the Patent Act of 1836, ch. 357, § 14, 5 Stat. 117, 123, which penalized "making * * * the thing whereof the exclusive right is secured by any patent." That concept has remained part of American patent law and since 1952 has been codified in its present form at 35 U.S.C. § 271(a). See Act of July 19, 1952, ch. 950, Pub. L. No. 82-593, 66 Stat. 792, 811.

[7] "Make" does not even appear as a term in Richard Burn's well-known law dictionary. See 2 R. Burn, A New Law Dictionary 103-104 (1792). But Black's Law Dictionary does contain an entry, which gives the term essentially its colloquial meaning. See Black's Law Dictionary 1041 (9th ed. 2009) (primary definition of "make" is "[t]o cause (something) to exist").

U.S. Br. 24 (citing Webster's Third New International Dictionary (1993)).

Bowman—by his own admission—"brought about" and "caused" those commodity beans that were herbicide resistant to germinate and grow into herbicide-resistant soy plants, which, in turn, produced a next-generation of herbicide-resistant seeds. See Pet. Br. 42. Under any generally accepted definition, therefore, Bowman engaged in an unlawful "making" by producing copies of Monsanto's patented seed.

2. *This Court's* Deepsouth *decision does not depart from the ordinary definition of "making"*

In an attempt to escape from the inevitable finding that he "made" copies of Monsanto's patented seed, Bowman relies on this Court's decision in *Deepsouth Packing Co.* v. *Laitram Corp.*, 406 U.S. 518 (1972). That decision, Bowman contends, narrows the meaning of "making." *E.g.*, Pet Br. 41-42.

But *Deepsouth* addressed a question of geography—*where* a making must occur to be actionable—not of *what* threshold activities constitute a making. An act may well be a "making," but if it does not occur within the United States, it is outside the territorial scope of § 271(a). *Deepsouth* decided that a making did not occur *in this country* when the individual components of a patented shrimp-deveining machine were exported for subsequent assembly into operative combinations *outside the United States*. 406 U.S. at 523, 528. A "making," the Court held, requires the formation of an "operable assembly," and that result was achieved—but only abroad, not here. See *id.* at 528-529.

The plaintiff in *Deepsouth* could therefore demonstrate that a "making" had occurred, but could not satisfy the *additional* statutory requirement that, to be action-

able, an operable whole must be "made" in America.[8] *Deepsouth* said nothing reflecting an intent to alter the broad, general definition of "making" described in *Bauer*. It certainly did nothing to suggest that acts of "bringing about" an "operative whole" or "causing" an "operative whole to be formed" are not "makings." Rather, the Court observed that the ordinary definition simply did not resolve the geographic question presented by the case. 406 U.S. at 527-528.[9]

The geographic principle articulated in *Deepsouth*, of course, has no application here. There is no dispute in this case that every relevant aspect of the "making" occurred in the United States—in Bowman's home state of Indiana. *Deepsouth* provides Bowman no shield.

C. Bowman offers no other persuasive argument as to why he did not engage in a "making"

To avoid liability as an infringer, Bowman asserts that "it was the planted soybean[s], not [he]," that engaged in the "making" of Monsanto's patented invention. Pet. Br. 42.[10] Bowman modestly claims that he did little more than "assist" commodity beans possessing herbicide re-

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[8] Incidentally, Congress abrogated the holding of *Deepsouth* by enacting 35 U.S.C. § 271(f), under which someone is now liable for infringement by engaging in the very kind of export-for-assembly activity at issue in *Deepsouth*.

[9] Even if the deveining devices had been assembled in the United States, Deepsouth would not have been liable for making them, because its customers, not Deepsouth itself, were responsible for actually making the operative whole. Nonetheless, had Deepsouth provided the materials to customers for assembly in the United States, the Court agreed that Deepsouth would have been liable for contributing to and inducing infringing acts. See *Deepsouth Packing Co.* v. *Laitram Corp.*, 406 U.S. 418, 526 (1972).

[10] Bowman's argument is premised on narrowly construing a "making" to exclude acts of "bringing about" or "causing to be." Cf. *supra* Part I.B.

sistance in the direct acts of creating next-generation seeds. *Ibid.*

This strained argument must fail. Bowman and all farmers are far more than "assistants"—they are *growers*, actively working to ensure that the seeds and beans they sow grow successfully into plants that produce progeny seeds. But the end result does not change even if one accepts Bowman's argument. Bowman would still be liable under agency-and-instrumentality principles for the acts of the soy beans he planted and the soy plants grown from them. Bowman's additional argument that he at most should be treated as akin to a joint-tortfeasor has the virtue of acknowledging some potential liability.[11] But that argument should be rejected given its unappealing implications and severe drawbacks, as described below. Ultimately, the only sound course is to recognize Bowman's liability as a direct infringer.

1. *Agency principles would attribute to Bowman the making of seeds by the plants he cultivated*

As described in Part I.B, *supra*, the concept of "making" has historically been broad. But the result would not change here even if that concept were narrowly limited to direct acts that proximately cause the creation and assembly of an operative whole. In this case, such direct acts were technically performed by the herbicide-resistant plants grown from the commodity beans that Bowman purchased, planted, and cultivated. But people can be held accountable under agency principles for the actions of instrumentalities they control. See, *e.g.*, Restatement (Third) of Agency § 1.04, cmt. e (2006) (treating non-persons, such as a dog or cat, as instrumentalities of the persons who control them and holding such

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[11] According to Bowman, he should at most be treated as an indirect infringer, liable for induced or contributory infringement, under 35 U.S.C. §271(b)-(c). See Pet. Br. 39-40, 42.

persons liable for the actions of these instrumentalities). Hence, under this theory, Bowman would still be held constructively liable for impermissibly making a next-generation of patented seeds.

That is because the plants that Bowman grew from the commodity beans were instrumentalities under his control.[12] Agricultural science has taught humankind how to exercise dominion and control over plant life. Farmers do not passively await a bean's or seed's spontaneous self-replication, as if today's farmers were "gatherers" from a prehistoric civilization. Rather, they have an intimate and active relationship with the beans and seeds they plant, causing them to germinate, and cultivating the resulting plants—all in particular places, at particular times, and under particular conditions. Moreover, beans and seeds do not fully control their own propagation. Such propagation only occurs when they are exposed to an appropriate combination of external conditions involving light, carbon dioxide, temperature, and water.[13]

Like any farmer, Bowman deliberately undertook affirmative steps to expose the commodity beans he purchased to such conditions, aiming to maximize his yield and profit. He chose the appropriate time to plant; sowed the beans in a particular fashion to achieve germination; and tended to the resulting plants by fertilizing and irrigating the ground and by applying pesticides. Indeed, he admits that he did all of these things while "hop[ing]" and expecting that some proportion of the

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[12] This situation contrasts with the one featured in *Deepsouth*, where the purchasers of the patented deveining devices were acting on their own accord and not as instrumentalities or agents of the accused supplier of the devices' components.

[13] See Royal Tasmanian Botanical Gardens, Seed Germination Requirements, at http://www.rtbg.tas.gov.au/index.aspx?base=287.

commodity beans he planted would be patented beans possessing the trait of herbicide resistance. Pet. Br. 8.

Based on that expectation, Bowman undertook the affirmative step of applying herbicide to his fields, knowing that it would have the effect of exploiting Monsanto's technology by selectively encouraging the growth of plants *only from patented beans that possessed the herbicide-resistance trait*, while killing everything else. See Pet. App. 9a-10a. As Bowman correctly states, "[c]ommodity grain can be dirty, containing a relatively high content of debris, seeds from other crops, and weeds," and it "lacks uniformity in maturity rate, disease resistance, drought resistance, and other beneficial traits." Pet. Br. 5. Bowman disposed of those undesired components by treating the entire field with herbicide, thus producing only herbicide-resistant seeds. He essentially took commodity beans, a heterogeneous mixture likely containing a large proportion of patented beans possessing the herbicide-resistance trait, and, from that, created a next-generation of seeds *exclusively* comprising a homogeneous population containing that trait.[14] Any further "makings," using the seeds he produced (or their progeny), therefore, would even more efficiently infringe Monsanto's patents.

Bowman offers no compelling reason for either treating the acts of a seed or a plant differently from those of

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[14] Bowman's use of herbicide was not critical for him to engage in an impermissible making of a next-generation of herbicide-resistant seeds inasmuch as some population of next-generation herbicide-resistant seeds would have been produced even without the use of herbicide. The use of herbicide was, however, critical to his controlling weed infestation and growing a homogenous herbicide-resistant crop bearing a homogenous population of herbicide-resistant seeds for his future use. These and other conscious acts distinguish him from the hypothetical "innocent" farmer who does not realize that he is growing such seeds in his field. See *infra* Part II.B.2.

other instrumentalities or for more generally abandoning the traditional view that persons can be liable for the acts of instrumentalities under their control. Given the significant degree of control he exercised and the considerable benefit he derived from his actions (the creation of herbicide-resistant soy plants bearing a next-generation of herbicide-resistant seeds, unencumbered by competition from weeds), it is entirely fitting to attribute the act of seed production to Bowman. That result is exactly what he intended and achieved.

2. *Bowman's position would deprive patentees of a cause of action for direct infringement*

Bowman's position that the herbicide-resistant soy plants grown from commodity beans were the direct infringers, not Bowman himself, would have another undesirable consequence: it would leave Monsanto with no legal recourse against *any* direct infringer.

Eliminating direct-infringement suits would severely limit the enforcement rights conferred by a patent. Direct infringement under § 271(a) is easier to prove than induced or contributory infringement under § 271(b)-(c), by virtue of requiring fewer elements of proof. Direct infringement is predicated on a theory of strict liability, whereas induced and contributory infringement require showing both the presence of an underlying act of direct infringement *and* that the accused had a specific intent to aid and abet the direct infringement. See *Global-Tech Appliances, Inc.* v. *SEB S.A.*, 131 S. Ct. 2060, 2066-2068 (2011). This distinction is neither trivial nor novel. See H.R. Rep. No. 82-1923, at 9, 28 (1952); S. Rep. No. 82-1979, at 8, 28 (1952).[15]

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[15] Both reports note that § 271(b) recites in broad terms that one who aids and abets an infringement is an infringer and that § 271(c) focuses specifically on the typical fact-pattern in which such aiding and abetting arises.

Moreover, Bowman is incorrect in asserting that holding farmers like him liable as direct infringers renders § 271(b)-(c) "superfluous." See Pet. Br. 14, 40. Those who aid and abet farmers in carrying out the activities Bowman engaged in can indeed be liable in the same way joint-tortfeasors are. For example, even if someone like Bowman were considered the direct infringer, those who improperly sell herbicide-resistant progeny seeds or glyphosate herbicide for use in treating plants derived from such seeds could be held liable for inducing or contributing to a farmer's direct acts of infringement. In reality, it is *Bowman's* approach that renders a statutory provision superfluous in this context—he eliminates a direct action under § 271(a).

II. Policy Implications Favor Monsanto

Bowman argues that wise policy and the adverse consequences of the Federal Circuit's judgment militate in favor of reversal. The opposite is true.

A. Reversing the Federal Circuit will impair the development of undeniably useful inventions with nothing gained in return

If Bowman's arguments are accepted, the rights of patentees like Monsanto will be "eviscerat[ed]," Pet. App. 14a (internal quotation omitted), stalling the invention of valuable bioengineered seeds, which, in turn, will translate into there being fewer such products for farmers like Bowman to use and fewer agricultural products to meet our population's needs.

To be sure, there are competing interests: the right of a patentee to preserve the exclusivity conferred by a patent versus the right of the consumer to freely enjoy the use of a patented article that is the subject of an authorized sale. The Federal Circuit struck the proper balance between those interests, ensuring that our society and environment enjoy the benefits of agricultural inventions

like Roundup Ready® soy beans.

Monsanto is by no means alone in developing seeds and plants that are genetically modified. Many others, including members of CropLife, have been active in the area. The list of relevant products extends well beyond soy beans, to include other important staples, such as tomatoes, cotton, corn, canola, squash, potatoes, alfalfa, papaya, and sugar beets. The International Service for the Acquisition of Agri-biotech Applications has a database of approved genetically-modified developments by crop, available at http://www.isaaa.org/gmapprovaldatabase.

These developments are part of a "green revolution" that will help feed, fuel, and clothe the world's population, which is estimated to grow by over 20% (or over 1 billion people) over the next 7 years.[16] Using recombinant DNA techniques to impart herbicide and insecticide resistance (among other things) to cultivated plants has enabled farmers to increase their crop yields (the reason Bowman wanted the patented seeds) while simultaneously reducing the environmental footprint of agricultural activities.

Accordingly, farmers have been successful in adopting sustainable reduced-till or no-till farming techniques and reducing their dependence on pesticides. The shift from tilling (a traditional approach for dealing with weeds) to reduced-till or no-till practices was recently estimated to translate into removing 1.205 billion kg of carbon dioxide from the atmosphere or the equivalent of 6.9 million cars from the road for one year.[17] Similarly, the use of geneti-

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[16] See Soils, Society & Global Change, Proceedings of the Int'l Forum, 53 (2007), available at http://eusoils.jrc.ec.europa.eu/esdb_archive/eusoils_docs/other/EUR23784.pdf.

[17] See Brookes & Barfoot, Global Impact of Biotech Crops: Environmental Effects, 1996-2008, 13 J. Agrobiotech Mgmt. & Econ. 1:76, 87 (2010), at http://www.agbioforum.org/v13n1/v13n1a06-brookes.htm.

cally-modified crops has translated into a 352 million-pound reduction in the amount of herbicide and pesticide used to treat crops between 1996-2008.[18]

Companies like Monsanto and those that comprise CropLife are expending hundreds of millions of dollars and rely on a massive work-force to research, develop, sell, and market innovative genetically-modified seeds and plants. These investments improve our society and environment, but the benefit of an enforceable patent position (and the exclusivity it affords) is a chief means for recouping those hefty investments. Patent exclusivity—and the consequent right to prevent others from engaging in the very acts Bowman did—therefore provides an important incentive to employ individuals and expend the time, energy, and resources necessary to bring such innovations to market. The positions that Bowman and his supporting *amici* urge would inevitably diminish that incentive, and reduce the critical advancements and benefits it spurs on for our society and environment.

B. The judgment below does not create patent-law inefficiencies, inconsistencies, or inequities

Some of the *amici*, particularly the Public Patent Foundation (PPF) and Knowledge Ecology Internationals (KEI), assert that holding farmers liable for making patented progeny seeds in circumstances like Bowman's would create certain inefficiencies, inconsistencies, and inequities under the patent law. The judgment below has no such consequences.

1. *Producing progeny seeds from commodity beans is wholly distinct from producing them from first-generation authorized seeds*

PPF seeks to paint the Federal Circuit's ruling as having the consequence that *every* production of patented

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[18] See *id.* at 78.

progeny seeds would infringe the patent. PPF, in other words, sees no distinction between what Bowman did (make the patented progeny seeds *from commodity beans* that were purportedly the subject of an authorized sale) and what the ordinary farmer does (produce progeny seeds *from patented first-generation seeds* purchased from Monsanto or its licensees). See Br. for PPF as *Amicus Curiae* 5-8.

But the commodity beans sold in the secondary market (particularly by a grain operator such as the one Bowman purchased beans from) are hardly on the same footing as patented first-generation seeds sold by Monsanto and its licensees. The *principal utility* of patented first-generation seeds is for use in planting and producing second-generation seeds, which the farmer can sell as commodity beans. See Pet. Br. 35 ("[P]lanting is the only intended use for [first-generation] Roundup Ready® seeds."). Indeed, farmers purposefully go to, and our state and federal governments expect farmers to go to, seed dealers like Monsanto for seeds for planting because such sources reliably provide a quality-controlled, homogenous product with well-characterized and defined properties, making it suitable for planting. There is no question that farmers can plant such seeds and produce progeny seeds from them without infringing Monsanto's patents; Monsanto and its licensees explicitly condone such activities in the Technology Agreement. Indeed, farmers reasonably expect to be able to engage in such activities, as such activities provide value to their purchasing patented first-generation seeds.

And that's the point: unlike patented first-generation seeds provided by Monsanto and its licensees, the principal utility of commodity beans is *not* for planting, because they are an undifferentiated mix of beans, weeds, and debris from around a region. They are not subject to the quality controls of first-generation seeds and by their na-

ture cannot provide the assurances that farmers and the government demand of seeds for use in planting. Rather, commodity beans' principal utility is for use as animal feed or in making food products for humans (ranging from tofu to baby formula and beyond). See Pet. App. 14a; see also North Carolina Soybean Producers Ass'n, Inc., How Soybeans Are Used, available at http://www.ncsoy.org/ABOUT-SOYBEANS/Uses-of-Soybeans.aspx; Iowa State University Soybean Extension and Research Program, Soybean Uses, available at http://extension.agron.iastate.edu/soybean/uses_soyproducts.html. Those uses may be freely practiced. By contrast, Bowman's use of commodity beans *for planting* was a highly unorthodox practice, and one that openly sought to avoid the cost of buying patented first-generation seeds from Monsanto or its licensees while still exploiting the considerable benefits of Monsanto's patented invention. See Monsanto Br. 5 n.5; Br. for Am. Soybean Ass'n as *Amicus Curiae*, at §H.

Moreover, a farmer like Bowman, who purchases patented first-generation seeds from Monsanto or a licensee, can, plant those seeds, produce and harvest the resulting second-generation seeds, and then sell those seeds on the secondary market. What that farmer may *not* do is use patented progeny seeds to engage in a new "making" of Monsanto's patented seed without Monsanto's consent. The two situations are clearly distinguishable; they are the very epitomes of non-infringing and infringing acts.[19]

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[19] This framework preserves a cause of action under § 271(a) for unauthorized "makings" that are separate and distinct from "uses," whether those uses are authorized or not. It is also consistent with the principles of patent exhaustion because—so long as a use does not take the form of making more patented seeds—it allows any use of patented seeds made available to the market to be freely practiced, whether the seeds are first-generation or otherwise.

2. *Farmers have sufficient notice of liability for cultivating patented progeny seeds*

KEI raises a separate point, arguing that farmers have no notice or knowledge that they possess patented progeny seeds—seeds that may not be planted without infringing Monsanto's patent rights—because there is no "marking" on the seeds. Br. for KEI as *Amicus Curiae* 10. But that concern is illusory, because it ignores the channels through which farmers acquire seeds for planting. Bowman's resort to a grain elevator to purchase commodity beans *for planting* was an aberrational practice at the least and gamed the system by accessing patented seeds on the cheap. Farmers conventionally obtain seeds for planting by purchasing them from seed dealers—such as Monsanto or a licensee. See Monsanto Br. 6 n.6; see generally Am. Soybean Ass'n Br., at § H.

This practice obviates KEI's worry. Farmers know whether they are purchasing patented seeds because they may do so only upon entering into a Technology Agreement. And such an Agreement puts farmers on notice that they cannot plant the progeny seeds they produce. See Pet. App. 7a.

KEI also asserts that, as a result of cross-pollination, farmers expose themselves to patent liability by unknowingly cultivating herbicide-resistant progeny seeds, and, in turn, propagating such seeds anew. See KEI Br. 10. KEI's proposed solution to this purported problem is to deem *all* patent rights in *all* progeny seeds exhausted. See *id.* at 9. That is an overreaction, throwing the proverbial baby out with the bathwater.

Monsanto has not sued farmers engaging in purely innocent accidental acts of infringement—farmers who had no knowledge that a progeny seed blew in with the wind, for instance. See Monsanto Br. 7, n.7; U.S. Br. 26, n.7. And that is for the simple reason that *innocent* acts

would not exploit the aspect of the progeny seeds that is valuable—the ability to treat an entire field with herbicide and use that as a means to selectively grow and harvest herbicide-resistant soy plants and seeds. The hypothetical innocent farmer who accidentally grows Monsanto's patented seeds would have no reason to deviate from whatever agricultural methods he would otherwise use—which, unless he had already legitimately obtained Monsanto's patented seeds, would *not* include wholesale treatment of a soy crop with herbicide. Because such a farmer is not exploiting the advantages of the patented seed, *i.e.*, herbicide resistance, there is little incentive to hale such an individual into court for patent infringement.[20]

But there is a substantial risk that if Bowman's position is adopted, the opposite will happen—farmers will rush to follow Bowman's lead and deliberately take advantage of the herbicide-resistance trait present in patented progeny seeds available in the secondary market. Bowman, unlike the innocent farmer, *aimed* to obtain patented seeds on the cheap and to plant them without having to pay tribute under Monsanto's patents. Those engaging in such makings are infringing Monsanto's patents, and—unlike the innocent farmer—should be held accountable.

Even if patentees like Monsanto *did* have a practice of suing innocent growers, KEI's remedy would still be far too broad. Any judicial response should be narrowly tai-

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[20] Even if innocent farmers did face a genuine threat of suit for engaging in arguably *de minimis* acts of infringement, the limited scale of such infringing activity can be properly addressed as it is in all settings where *de minimis* infringement is at issue, *i.e.*, by fashioning a damages award that is proportional to the injury actually caused. See *Integra Lifesciences I, Ltd.* v. *Merck KgAa*, 331 F.3d 860, 864 (Fed. Cir. 2003).

lored to address the prosecution of such suits, not take the form of a general rule of law that immunizes the planting and cultivation of herbicide-resistant progeny seeds under all circumstances, no matter how culpable. That would, as the Federal Circuit correctly observed, "eviscerat[e]" the rights conferred by Monsanto's patents, and be a powerful disincentive to the further development of valuable agricultural technology.

C. A ruling in favor of Bowman would sweep far more than seeds in its wake

If this Court were to reverse the judgment below, such a ruling would affect—and greatly expand—the patent exhaustion of all technologies capable of resulting in "self-replication," including live vaccines, recombinantly engineered cells, and transgenic animals. A blanket rule that holds that an authorized sale of such non-naturally occurring inventions permits a *subsequent* generation to be freely used to make an *even-later* generation will gut the rights afforded by patents protecting the underlying invention. Hence, a judgment in this case will either advance or retard the development of, and the public's access to, extraordinary new inventions of tremendous social, economic, and environmental value. The Federal Circuit's judgment protects inventors without harming purchasers. Its judgment should be affirmed.

CONCLUSION

Bowman's liability for engaging in impermissible "makings" is wholly consistent with the reach of 35 U.S.C. § 271(a). He planted and cultivated commodity beans to grow herbicide-resistant soy plants that produced a next-generation of herbicide-resistant seeds. Immunizing such conduct under an expansive view of patent exhaustion would simultaneously depart from governing law and jeopardize the very benefits genetically-modified seeds and plants provide. Those benefits are worth keeping. They include creating jobs; helping

our society, and the world, meet an ever-expanding need for food, clothing, and energy; and protecting the environment from the pollution generated by traditional farming techniques. For the foregoing reasons, this Court should affirm the judgment below.

Respectfully submitted.

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AMICUS CURIAE BRIEF

No. 11-796

IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, *et al.*,

Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF OF ECONOMISTS AS *AMICI CURIAE* IN SUPPORT OF RESPONDENTS

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INTEREST OF THE *AMICI CURIAE* [1]

Amici are academic and professional economists specializing in agricultural economics, industrial organization, and the economics of innovation.

Dr. Kenneth G. Elzinga is the Robert C. Taylor Professor of Economics at the University of Virginia, where he specializes in the economics of industrial organization. He is the author of dozens of books and articles, four of which have been cited with approval by this Court.[2]

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Dr. Vandy Howell is a vice president of Cornerstone Research, where she specializes in antitrust and intellectual property matters. Dr. Howell has

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[1] The written consents of all parties to the filing of this brief have been lodged with the clerk. No counsel for any party in this case authored this brief in whole or in part, and no person or entity other than *amici curiae* and their counsel made a monetary contribution to its preparation or submission.

[2] *See Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 226 (1993) (citing Professor Elzinga's article with David E. Mills regarding testing for predation); *Tex. Indus., Inc. v. Radcliff Materials, Inc.*, 451 U.S. 630, 636 n.8 (1981) (citing Professor Elzinga's 1976 book with William Breit on antitrust penalties); *United States v. Falstaff Brewing Corp.*, 410 U.S. 526, 551 (1973) (citing Professor Elzinga's 1971 article on the economics of the American beer industry); and *Ford Motor Co. v. United States*, 405 U.S. 562, 582 (1972) (citing Professor Elzinga's 1969 article on antitrust remedies).

also taught industrial organization and public policy at the University of California, Berkeley.

Dr. Anne Layne-Farrar is a vice president in the Antitrust & Competition Economics Practice of Charles River Associates, where she specializes in antitrust and intellectual property matters, especially where the two issues are combined. She has written on the economics of the patent exhaustion doctrine, and her papers have appeared in journals including *Antitrust Law Journal*, *International Journal of Industrial Organization*, and the *Journal of Competition Law and Economics*.

Amici are economists not lawyers and express no view regarding the interpretation of the Patent Act or this Court's precedents. However, *amici* do believe that their expertise can assist the Court in understanding how agricultural innovation increases consumer welfare and how a decision that the first sale of patented seed or of seed containing patented traits exhausts patent rights will undermine consumer welfare.

Specifically, *amici* are cognizant of the essential role of innovation in delivering better products at lower cost to consumers, thereby increasing the efficiency of markets and consumer welfare. Innovation has delivered enormous benefits to farmers as well as consumers, and patent protection plays a critical role in creating the incentives necessary for firms to make the substantial investments required to breed seed and invent new agricultural biotechnologies. While there are important debates among economists regarding the effect of the patent system on innovation in some industries, and while more and stronger patents do not necessarily lead to more innovation, the economic literature recognizes the centrality of

patent protection in creating incentives for innovation in industries such as biotechnology.

Amici favor efficient market structures that bring consumers more choices and lower prices. As experts in the field, *amici* believe that they can assist the Court in understanding the effects of denying agricultural biotechnology innovators relief under the Patent Act after the first sale of a patented seed. Forcing innovators to rely solely on cumbersome and ineffective contractual remedies will not only reduce incentives to innovate, but will also likely lead to higher prices for patented seeds and traits and less efficient, less competitive industry structures.

SUMMARY OF ARGUMENT

At stake in this case is the continued vitality of agricultural innovation, which is indispensable to feeding the burgeoning world population. Advances in plant breeding have led to substantial increases in crop yields, and the application of biotechnology has enabled scientists to insert genes from other organisms into plant seeds, producing crops that, among other things, are resistant to insects, drought and herbicides. Corn yields have doubled and soybean yields have grown 50% since the 1970s. The innovations delivered through the tools of agricultural biotechnology have likewise yielded dramatic gains in farmers' income—a $3.3 billion increase in 2010 for soybeans alone—and lowered prices for consumers. Other innovations under development will improve the nutritional value and health benefits of soybeans and other crops.

Intellectual property rights have provided the incentives that fueled these innovations. Particularly in agriculture, protecting those rights is crucial to

future advances. To develop new traits for seeds, innovators must invest significant time and money. Once those traits are developed, however, others can cheaply reproduce them, particularly in varietal crops such as soybeans in which the progeny of a plant is identical to the seed used to grow the plant. Without adequate patent protection, inventors could not obtain a return on their investments, and there would be little, if any, incentive to innovate. Allowing the inventor only one sale to recoup the entire cost of an agricultural invention would not provide adequate incentives, reducing incentives to innovate, undermining competition, and harming consumers.

The patent system is essential because other mechanisms do not sufficiently protect incentives to innovate. That is especially true with regard to seeds and traits. If the first sale of a genetically modified seed exhausted all patent rights, innovators could not rely on contracts to ensure that they were adequately compensated. The innovator would have a contract remedy only against those to whom it sold seed, that is, the other parties to the contract. Although every entity in the chain of distribution of soybeans could potentially provide seeds to others for replanting, it would be impossible for an innovator to effectively or efficiently with each entity in the distribution chain. Moreover, even if the innovator could contract with each grower, trucking company, grain elevator, railroad, and soybean processor across the distribution chain, the innovator would have no effective way to identify the entity that breached its contract by providing soybeans for replanting, and no effective way to proceed against them.

Other proposed alternatives to patent protection would be no more effective. "Terminator technol-

ogy"—traits that would prevent second generation seeds from growing—is not commercially available. Even if it were, there are serious doubts whether the public would accept or governments would approve the sale of food with a sterility gene.

The suggestion by one *amicus*, the American Antitrust Institute, that innovators simply stop selling traits in varietal seeds, conflicts with the very purpose of the intellectual property laws. The Constitution authorized a system of patents to "promote the Progress of Science." U.S. Const. art. 1, § 8, cl. 8. To propose the alternative of not innovating and not commercializing innovations as a substitute for patent protection stifles rather than promotes the progress of science.

Given these inadequate alternatives, a ruling that the first sale of a patent trait or seed exhausted all patent right would cause significant economic harm—higher prices, lower output, and decreased competition. Seed and trait innovators would have to charge a price for the first sale that captured the full value of the invention. Such high upfront costs would be problematic for farmers with highly variable income, requiring long-term borrowing at higher interest rates. Moreover, that upfront investment would lock farmers into a particular seed choice for years, stifling the competition—and the resulting stimulus to innovation—that occurs as farmers seek out the best new seed varieties from season to season.

In addition, if a first sale exhausted all patent rights, licensing seeds or traits to a university for research or to a small competitor would pose the same commercial risks as licensing them to a large competitor. Subsequent generations of seeds could still flood the market, whatever their source, with no

incremental payment to the innovators. Currently, universities receive a price break based on the intensity of their commercial use of the product and smaller competitors pay only for the licensed seed that they actually sell. Application of the first sale doctrine would lead to higher prices to and less complementary innovation by universities and smaller firms.

The same problems do not arise for hybrid seeds, such as corn. Unlike varietal seeds like soybeans, hybrid crops do not produce seeds that can be replanted without dramatic yield loss. A ruling that the first sale of a patented seed exhausts patent rights in succeeding generations thus would not affect hybrid seeds. The resulting disparity in the ability of innovators to recoup their investments would skew incentives for research and development, shifting resources away from varietals to hybrids in a manner that would otherwise not make economic sense.

Finally, ruling that a first sale of seed exhausts patent rights would artificially increase vertical integration in the seed market. One business model in that market, which Monsanto has adopted, is to license traits broadly to many seed companies. Another approach, which some companies have adopted, is to limit distribution to seed companies owned by the inventor. If a first sale of seed exhausted patent rights, companies would have enormous incentives to reduce the risks posed by inefficient and insufficient contract remedies by refusing to out-license their technology. While vertical integration is not inherently anti-competitive, thwarting a choice between that approach and broad licensing

would undermine competition and efficiency in the market.

In sum, a decision that the first sale of patented seed exhausts all patent rights would impede innovation, undermine competition, and harm consumers.

ARGUMENT

I. ENCOURAGING AGRICULTURAL INNOVATION IS CRITICALLY IMPORTANT, AND INTELLECTUAL PROPERTY PROTECTION IS ESSENTIAL TO CREATE INCENTIVES TO INNOVATE.

The Constitution authorizes Congress to "promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." U.S. Const. art. 1, § 8, cl. 8. To this end, Congress has enacted the Patent Act, 35 U.S.C. §§ 1 *et seq.*, affording innovators that disclose novel and useful inventions the exclusive right to make, use, and sell them. "The federal patent system . . . embodies a carefully crafted bargain for encouraging the creation and disclosure of new, useful and nonobvious advances in technology . . . in return for the exclusive right to practice the invention for a period of years." *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150-51 (1989). In the words of Abraham Lincoln inscribed over the door of the former home of the Patent and Trademark Office (now the Department of Commerce), through this patent bargain "the Patent System adds the fuel of interest to the fire of genius."

A. Innovation, Particularly Agricultural Innovation, Delivers Enormous Economic Benefits.

The transformative gains in productivity enabled by innovation deliver enormous economic benefits. Indeed, the social rate of return from investments in innovation can be double the private rate of return. *See, e.g.*, Charles I. Jones & John C. Williams, *Measuring the Social Return to R&D*, 113 Q. J. ECON. 1119 (1998); Bronwyn H. Hall, *The Private and Social Returns to Research and Development*, in TECHNOLOGY, R&D, AND THE ECONOMY (B.L.R. Smith and C.E. Barfield, eds., 1996); Edwin Mansfield, *Microeconomics of Technological Innovation*, in TECHNOLOGY AND GLOBAL INDUSTRY 311 (Bruce R. Guile & Harvey Brooks, eds., 1987).

Innovation in agriculture has occurred in a number of forms, including both seed breeding and biotechnology. Both are at issue in this case because patents can protect the products of both types of innovation. *See J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124 (2001) (sexually reproduced plants eligible for utility patents); *Diamond v. Chakrabarty*, 447 U.S. 303, 305 (1980) (genetically engineered organisms can be patented). Both forms of innovation have delivered substantial benefits to farmers and to consumers.

Application of scientific techniques to seed breeding and the incentives for innovation created by the passage of the Plant Variety Protection Act in 1970 have led to U.S. corn yields more than doubling between 1970 and 2011 (from 72.4 to 147.2 bushels/acre) and soybean yields increasing by more than 50% (from 26.7 to 41.9 bushels/acre) in the same

time period. *See* USDA NATIONAL AGRICULTURAL STATISTICS SERVICE, *available at* http://www.nass.usda.gov/Statistics_by_Subject/index.php?sector=CROPS.

Beginning in the early 1990s, seed companies began to bring to market seeds improved not just through seed breeding, but through the use of the tools of biotechnology to insert genes that do not naturally occur in the plant. Through these techniques, a gene from one organism that causes it to express a useful protein is identified, modified as necessary for expression in a plant, and inserted in the genome of a plant. These genes carry:

- traits that allow plants to produce their own natural insecticide by creating insecticidal proteins found in *bacillus thuringiensis* (a bacteria long used by organic farmers as an insecticide),
- traits that improve the quality of the oils produced by plants (optimizing them for use in food, agricultural feed, or in the production of ethanol),
- traits that improve resistance to drought, and
- traits that allow plants to tolerate the application of more environmentally friendly and lower-cost herbicides, such as the Roundup Ready trait affording resistance to glyphosate herbicide in the soybeans Petitioner Bowman saved and replanted.[3]

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[3] *See generally* NATIONAL RESEARCH COUNCIL, IMPACT OF GENETICALLY ENGINEERED CROPS ON FARM SUSTAINABILITY IN THE UNITED STATES 4 (2010) ("Glyphosate kills most plants without substantial adverse effects on animals or on soil and water quality, unlike other classes of herbicides.").

Agricultural biotechnology has delivered these traits that protect crops from yield-robbing weeds, insects, and environmental stresses (such as drought) while allowing farmers who plant genetically engineered crops to save time and energy as well as improve safety. *See* NATIONAL RESEARCH COUNCIL, IMPACT OF GENETICALLY ENGINEERED CROPS ON FARM SUSTAINABILITY IN THE UNITED STATES 9 (2010) ("Farmers who have adopted GE crops have experienced lower costs of production and obtained higher yields in many cases because of more cost-effective weed control and reduced losses from insect pests.") [henceforth NATIONAL RESEARCH COUNCIL]; *id.* at 10 ("Adopters of GE crops experience increased worker safety and greater simplicity and flexibility in farm management, benefitting farmers even though the cost of GE seed is higher than non-GE seed.").

The benefits of these technologies versus conventional farming can be seen in what economists call "revealed preference"; farmers would not have shifted to planting more than 80% of all acres of corn, soybeans, and cotton with new inventions of agricultural biotechnology if they did not receive substantial benefits from doing so. *See, e.g.*, *id.* at 9 ("The rapid adoption of GE crops since their commercialization indicates that the benefits to adopting farmers are substantial and generally outweigh additional technology fees for these seeds and other associated costs."); NATIONAL CENTER FOR FOOD AND AGRICULTURE POLICY, QUANTIFICATION OF THE IMPACTS ON US AGRICULTURE OF BIOTECHNOLOGY-DERIVED CROPS PLANTED IN 2006, at 46 (2007) ("The simplicity, flexibility, safety, and economics of weed management programs based on the glyphosate-resistant varieties have had a significant influence on the adoption in the US."), *available at* http://www.ncfap.org/documents/

2007biotech_report/Quantification_of_the_Impacts_on_US_Agriculture_of_Biotechnology.pdf.[4]

According to one study, the global annual income gain to farmers from planting herbicide tolerant soybeans like those Mr. Bowman planted was $3.3 billion in 2010, and the incremental farm income to growers of all genetically modified crops was $14 billion. *See* Graham Brookes & Peter Barfoot, *The Income and Production Effects of Biotech Crops Globally 1996–2010*, 3 GM CROPS & FOOD 265, 269 (2012).[5]

The benefits of agricultural biotechnology extend beyond the innovators that created the technology and to the farmers that apply it. Some studies show that consumers capture more than half the total benefits. *See, e.g.*, NATIONAL RESEARCH COUNCIL at 161 (collecting data from multiple studies). Consumers benefit when competition causes the output-enhancing benefits of higher yields and lower costs to be passed down the value chain, leading to lower prices. According to the National Research Council, "The effect of adoption of HR soybean varieties on

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[4] The simplicity of biotech crops allows growers to reduce their time spent farming and enables them to earn additional outside income. *See* USDA ECONOMIC RESEARCH SERVICE, THE FIRST DECADE OF GENETICALLY ENGINEERED CROPS IN THE UNITED STATES, at iv (2006), *available at* http://www.ers.usda.gov/media/255908/eib11_1_.pdf ("[T]he adoption of herbicide-tolerant soybeans is associated with increased off farm household income, suggesting that farmers adopt this technology because the simplicity and flexibility of the technology permit them to save management time, allowing them to benefit from additional income from off-farm activities.").

[5] *See also, e.g.*, GianCarlo Moschini, *Biotech—Who Wins? Economic Benefits and Costs of Biotechnology*, 2 ESTEY CENTRE J. INT'L L. & TRADE POL. 93, 98 (2001), *available at* http://ageconsearch.umn.edu/bitstream/23862/1/02010093.pdf.

soybean price ranged from a decline of 0.17 percent in 1997, when adoption had only occurred in the United States, to about a 2-percent decline following further adoption in the United States and Argentina and a 2.6-percent decline for world adoption in 2001." *Id.* at 159.

Continuing agricultural innovation is vital. In addition to delivering returns to farmers and consumers, innovation enables higher yields and reduces the use of pesticides. The global population continues to grow and per-capita demand for protein is growing as standards of living rise around the world. As a result, global food demand is forecast to double by 2050, and technological innovation will be required to meet that demand without negative environmental consequences. *See, e.g.*, David Tilman, *et al.*, *Global Food Demand and the Sustainable Intensification of Agriculture*, 108 PROCEEDINGS OF THE NAT'L ACAD. OF SCI. 20260–64 (2011).

Norman Borlaug, the winner of a Nobel Peace Prize for yield-improving innovations that saved millions of people from starvation, has described how essential agricultural biotechnology is to continuing the mission of his "green revolution." As he notes, "[b]y 2025, we will have to nearly double current production again. This increase cannot be accomplished unless farmers across the world have access to current high-yielding crop production methods as well as new biotechnological breakthroughs that can increase the yields, dependability, and nutritional quality of our basic food crops." Norman E. Borlaug, *Ending World Hunger: The Promise of Biotechnology and the Threat of Antiscience Zealotry*, 123 PLANT PHYSIOL. 487, 490 (2000).

Many new biotechnology traits are being developed and could extend the benefits delivered by agricultural biotechnology to date. Traits that would offer nutritional and other health benefits include high isoflavone soybeans (which offer increased health benefits); low phytate soybeans (which allow more absorption of zinc and iron); and increased omega-3 soybeans (which offer cardiovascular benefits usually associated with fish oils). *See* U.S. SOYBEAN EXPORT COUNCIL, THE BENEFITS OF BIOTECHNOLOGY: SCIENTIFIC ASSESSMENTS OF AGRICULTURAL BIOTECHNOLOGY'S ROLE IN A SAFER, HEALTHIER WORLD, *available at* http://www.ussec.org/wp-content/uploads/2012/09/The-Benefits-of-Biotechnology.pdf. Firms are also developing traits that afford improved tolerance to stresses like drought, cold, and soil salinity and that increase yield by, for example, enabling plants to use nitrogen more efficiently.

B. Intellectual Property Protection Is Essential for Agricultural Innovation.

Intellectual property rights are essential to create the incentives that have led to the innovations in seeds and traits thus far, and the promise of intellectual property protection has been a key driver of the investments that will lead to future innovations. Agricultural innovations, notably those involving seeds and traits, are "imperfectly appropriable, meaning that the innovation, or the knowledge embodied in the innovation, can be transmitted to, imitated by, or reproduced by prospective competitors with minimal difficulty or at a low cost, and with little or no obligation to compensate the innovators." USDA ECONOMIC RESEARCH SERVICE, THE SEED INDUSTRY IN U.S. AGRICULTURE 18 (2004), *available at* http://www.ers.usda.gov/media/260729/aib786_1_.pdf

[henceforth SEED INDUSTRY IN U.S. AGRICULTURE]. The innovations of plant breeders and trait developers can be readily copied both by competing trait developers and breeders and by growers such as Mr. Bowman. *Id.*

The combination of the high costs of developing seeds (and the far greater costs of developing traits) and the low cost of reproducing those inventions, makes the protection of intellectual property essential for inventors to recover their investment in innovation. *Id.* at 22 ("Both legislative and judicial action have contributed to an IPR regime in the United States that provides an extensive set of incentives to developing new plant varieties."). The work of agricultural economists has demonstrated the importance of patent protection in spurring innovation. *See, e.g.*, GianCarlo Moschini, *Biotech—Who Wins? Economic Benefits and Costs of Biotechnology Innovation in Agriculture*, 2 ESTEY CENTRE JOURNAL OF INTERNATIONAL LAW AND TRADE POLICY 93, 102 (2001) ("[P]atents can mitigate the market failure ascribed to the public good nature of inventions (which is thought to lead to underproduction of innovations). It is believed that the strengthening of IPRs in the United States over the last 20 years has had considerable impact on agricultural research, in particular by stimulating investment in biotechnology R&D.").

Lack of effective IP protection has very real consequences for investment in innovation, because for-profit firms will not invest in innovation without the prospect of a return. "The use of saved seeds to plant subsequent crops severely limited the extent to which innovators might realize the benefits of plant breeding efforts." SEED INDUSTRY IN U.S. AGRICULTURE at

17. The availability of utility patent protection, however, "has greatly increased the amount of private sector research since 1996 with the commercially successful introduction of glyphosate-resistant soybeans." Dermot J. Hayes, *et al.*, *Impact of Intellectual Property Rights in the Seed Sector on Crop Yield Growth and Social Welfare: A Case Study Approach*, 12 AGBIOFORUM 155, 158 (2009).

Amici recognize that there is an active debate regarding the net effect of the patent system on innovation, and that even if patents spur innovation by inventors, they may reduce the ability of follow-on firms to innovate. *See, e.g.*, Jerry R. Green & Suzanne Scotchmer, *On the Division of Profit in Sequential Innovation*, 26 RAND J. ECON. 20 (1995); Richard D. Levin, *et al.*, *Appropriating the Returns from Industrial Research and Development*, BROOKINGS PAPERS ON ECONOMIC ACTIVITY 783, 788 (1987) ("Because technological advance is often an interactive, cumulative process, strong protection of individual achievements may slow the general advance."). *Amici* also recognize that there can be a tradeoff between the dynamic efficiency enabled by innovation and the short term static losses occasioned by the impact of the patent system's exclusive rights on competition. *Id.* at 787-88.

The appropriate balance—in particular, the need for patent protection to spur innovation—varies by industry and is determined by a number of factors, including the difficulty of copying inventions, the lead time required to commercialize an invention, and first-mover advantages. *Id.* at 799-802; *see also* Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1581-84 (2003). The mix in the pharmaceutical industry makes it the "poster

child" for patent protection because discovering and testing new drugs is costly, the need for testing shortens the effective patent term, and the cost of copying inventions is low. *See* Richard A. Posner, *Why There Are Too Many Patents in America*, THE ATLANTIC (July 12, 2012). These same factors apply to the biotechnology industry, where "the long development and testing lead time characteristic of pharmaceuticals is also evident in DNA-related innovation," and "once the [genetic] sequence is known, a follow-on competitor can quite easily replicate it." Burk & Lemley, 89 VA. L. REV. at 1624-25. Indeed, a research study by agricultural economists suggests there is currently *too little* IP protection for varietals such as soybeans and that "appropriability levels"—*i.e.* the ability of an innovator to capture the value its invention brings to others—"are far lower than the social optimum." Sergio H. Lence, *et al.*, *Welfare Impacts of Intellectual Property Protection in the Seed Industry*, 87 Am. J. Agric. Econ. 951, 966 (2005).

While there remains economic work to be done to determine the optimum level of intellectual property protection, it is clear that the optimum patent term for seeds and traits must be longer than the time it takes to make a single sale and that the optimum reward for seed and trait innovation must be more than an inventor can obtain from a single sale. A rule that all patent rights are exhausted after the first sale of a patented seed or trait would lead to a reduction of seed and trait innovation and would thus harm competition and consumers.

II. ALTERNATIVES TO PATENT PROTECTION ARE INFERIOR AND INEFFICIENT.

Petitioner and its *amici* purport to identify a variety of ways in which Monsanto and other seed and trait inventors could protect their interests even if patent rights were exhausted after the first sale. These techniques would be ineffective, inefficient, or both. Rules that raise the costs and decrease the effectiveness of enforcement would both decrease innovators' incentives to license and raise the costs of licensees and consumers, as the innovators' costs of enforcement are passed through as a cost of doing business.

A. Innovators Cannot Effectively or Efficiently Rely Upon Contracts.

Amici supporting Petitioner suggest that Monsanto could effectively rely on contract law as a substitute for patent protection by requiring farmers who buy seed to sell their crop only to grain elevators that agree to obtain promises from purchasers not to allow the seed to be replanted. *See, e.g.*, Pet. Br. 55-56, Center for Food Safety Br. 25, American Antitrust Institute Br. 20. This suggestion is wrong.

1. Innovators have no remedy against purchasers that are not in contractual privity.

As the United States correctly states, "[c]ontractual remedies are not effective against downstream purchases who are not in privity with the patent holder." United States Br. 18. A person could readily obtain and plant the progeny of an authorized Roundup Ready soybean crop without ever purchas-

ing Roundup Ready soybean seed directly from Monsanto or a licensed seed company, and contractual remedies would be ineffective against such persons. *See* Herbert Hovenkamp, *Post-sale Restraints and Competitive Harm: The First Sale Doctrine in Perspective*, NYU ANNUAL SURVEY OF AMERICAN LAW 101, 116 (Feb. 15, 2011).

While the lack of contractual privity would prevent innovators from enforcing their rights against those that never signed a contract, there would be enormous practical obstacles to enforcement of contractual rights against those that *did* sign contracts. Seeds and traits are not labeled "originally sold to Farmer Jones," and an innovator that discovers the unlicensed use of its seed has no reliable way to know which authorized recipient of its patented seed breached its agreement by supplying that seed to others. While Petitioner Bowman acknowledged obtaining seed from an elevator, if he had claimed that he had found the seed abandoned ("it fell off the back of a truck"), or that he could not remember who provided the seed, Monsanto would have had no recourse against those who had provided the seed to him, even if they were bound by contract not to do so.

2. It is impossible for an innovator to contract with every potential recipient of its patented seeds.

Taken literally, the only way to avoid the privity problem is for the innovator to contract with every potential recipient of its patented seeds. Speaking practically, this would be impossible.

Petitioner and its *amici* would require that Monsanto contract with every entity in the soybean production and distribution chain to protect its rights,

extracting agreements from each not to save and replant patented seed and not to sell patented seed to anyone unless the buyer had likewise entered into an agreement with Monsanto not to save and replant seed or sell to anyone who could. That would mean contracting not only with every grower, but with every trucking company that brings soybeans to elevators, every grain elevator, every railroad and railcar owner that transports seed from the elevator to the processor, and every food processor that buys soybeans.

Because commodity soybeans grown in the United States are sold worldwide, seed and trait innovators would also need to contract with every foreign customer, foreign transportation company, and foreign processor dealing in U.S. soybeans, to prevent those soybeans from being reexported to the United States for planting.[6] Moreover, the US Agency for International Development distributes bags of U.S.-grown soybeans around the world as emergency food aid. *See, e.g.*, USAID, SOYBEAN COMMODITY FACT SHEET, *available at* http://www.usaid.gov/what-we-do/agriculture-and-food-security/food-assistance/resources/soybeans-commodity-fact-sheet. According to the most recent USAID report, bags of soybeans were distributed to hundreds of thousands of needy recipients in Liberia and Afghanistan. *See* USAID, U.S. INTERNATIONAL FOOD ASSISTANCE REPORT 2010, *available*

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[6] This Court has never addressed the application of the first sale doctrine to patented items first sold outside the United States. But because we are addressing the foreign sale of seed first sold in the United States, to which exhaustion might otherwise apply, innovators would need to contract with these foreign entities to protect their rights.

at http://pdf.usaid.gov/pdf_docs/PDACT300.pdf.[7] It goes without saying that it is not feasible to require a seed or trait innovator to protect its rights by prohibiting the sale of soybeans to the United States government unless the government in turn agrees to extract a contractual commitment not to resell soybeans for reexport to the United States from each of the hundreds of thousands of impoverished recipients of U.S.-grown soybeans provided as food aid.

3. It would be infeasible to enforce contract rights.

Even if all of the required contracts could be negotiated and executed—and, of course, they could not be—it would be difficult and expensive to enforce contractual rights. It is doubtful that innovators could obtain effective relief.[8]

Beyond the obvious difficulties in enforcing a contract barring resale in the United States against Afghan and Liberian recipients of bags of U.S. soybeans as food aid, innovators are unlikely to have

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[7] Many other recipients receive soybean meal rather than whole soybeans. While it might be possible to extract patented genetic material from soybean meal, we focus here on the sale of whole soybeans.

[8] Monitoring and transaction costs already make it difficult and expensive to enforce current contractual rights with parties in privity with Monsanto. *See* Jeremy P. Oczek, *In the Aftermath of the "Terminator" Technology Controversy: Intellectual Property Protections for Genetically Engineered Seeds and the Right to Save and Replant Seed*, 41 B.C. L. REV. 627, 646 (2000) (noting that "licensing agreements pose problems for seed developers who seek to reinforce the patent and PVPA protection available for seeds," in particular, that "the effectiveness of these agreements is severely limited by the enormous monitoring costs that they demand.").

effective remedies even against parties in the United States that breach their agreements to resell seed only to buyers that have themselves agreed with the innovator not to replant saved seed. Saving and replanting the seed produced from a single bag of seed can yield 36 bags the following season, and the progeny of a single bag of seed can plant more than 46,000 acres (36^3) after three years. Given average farm net worth of $576,000, USDA ECONOMIC RESEARCH SERVICE, AGRICULTURAL INCOME AND FINANCE OUTLOOK 1 (Dec. 2011), *available at* http://www.ers.usda.gov/media/246635/ais-91_3-1-12.pdf, many farmers are likely to be judgment proof if they resell a substantial volume of seed in violation of their agreement with the trait developer. Rather than concentrating liability on parties who, if they could be identified at all, would be unable to cover the trait developer's loss, it would more be effective for the developer to sue each recipient of the seed for patent infringement, collecting from that infringer only the damages accruing from the infringer's use on his own land.

B. Introducing "Terminator" Technology is Not a Viable or Desirable Solution.

Some *amici* suggest that Monsanto could implement a technological solution to protect its investment in developing genetically-improved crops. *See, e.g.*, American Antitrust Institute Br. 33; Knowledge Ecology International Br. 13 n.2. Gene Use Restriction Technology (GURT) includes a range of technologies employed at the genetic level to limit the use or spread of specific genetic material in agriculture. One type of GURT is sterile seed technology in which seed produced by a crop will not grow, and

has been dubbed "terminator technology" in the popular press.

There is no commercially available "terminator technology," and there may never be. The U.N. Food and Agriculture Organization has recommended that GURT technologies not even be approved for field testing by parties to the Convention on Biodiversity (to which the United States is a signatory). *See* SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY, HANDBOOK OF THE CONVENTION ON BIODIVERSITY 332 (3d ed. 2005). Even if such technologies became available, there would be significant concerns regarding public acceptance of the product, which could reduce demand and make commercialization infeasible. As a result of these concerns, Monsanto committed in 1999 not to commercialize sterile seed technology in food crops and continues to stand by this commitment. *See* MONSANTO COMPANY, IS MONSANTO GOING TO DEVELOP OR SELL "TERMINATOR" SEEDS?, *available at* http://www.monsanto.com/newsviews/Pages/terminator-seeds.aspx; OPEN LETTER FROM MONSANTO CEO ROBERT B. SHAPIRO TO ROCKEFELLER FOUNDATION PRESIDENT GORDON CONWAY AND OTHERS (Oct. 4, 1999), *available at* http://www.monsanto.com/newsviews/Pages/monsanto-ceo-to-rockefeller-foundation-president-gordon-conway-terminator-technology.aspx.

C. Ceasing the Sale of Traits in Varietal Seeds Would Harm Consumers.

Amici American Antitrust Institute *et al.* suggest that innovators could simply stop selling traits in varietal seeds: "From the beginning [Monsanto] could have abstained from using its technology to create the glyphosate tolerant soybean seed or other inbred

seed lines and instead confined its applications to hybrid seeds that do not produce true copies of themselves." Br. 33.[9]

Every innovator could avoid patent exhaustion (or any other limitation on its ability to exploit its patent rights) simply by not innovating. But this "destroy the village to save it" approach would have truly devastating consequences, and it is difficult to imagine that *amici* intend this proposal to be taken seriously. More than 90% of U.S. soybean acres are planted with patented varieties or unpatented varieties that contain patented traits. *See* USDA, RECENT TRENDS IN GE ADOPTION, http://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us/recent-trends-in-ge-adoption.aspx. These soybean acres are critical for the world's food supply and the American economy, and cannot simply be planted with something else or left fallow. Even if *amici* are instead suggesting that these acres be planted with unpatented varieties that do not contain patented traits, this step would deny farmers and consumers the enormous benefits of the patented technology that we have described above.

III. APPLYING THE PATENT EXHAUSTION DOCTRINE TO PATENTED SEED WOULD HAVE NEGATIVE ECONOMIC EFFECTS.

Because there are no viable contract or other alternatives to the use of patent protection, applying

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[9] Because varietal seeds are patentable, *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124 (2001), it is not clear whether the American Antitrust Institute and those that joined its brief are proposing that breeders stop selling patented varietal seeds as well.

patent exhaustion to the first sale of a patented plant seed would produce economic inefficiencies and distortions. If this were the law, authorized sale of even a *single* varietal seed would exhaust all patent rights. The progeny of that seed could be replanted for crop use or used by a rival seed company for breeding without any payment to the innovator. As described above, reproduction from a single soybean seed is exponential—all patented Roundup Ready soy grown in the United States is the descendant of a single seed transformed by Monsanto's researchers to include a particular genetic sequence in a particular location in the soybean genome. The progeny of that single seed are now planted on over 90% of US soy acres. If Monsanto were unable to prohibit this type of exponential reproduction, it would lose the ability to protect its patented technology as soon as the first generation of the product was introduced into the market.

A. Application of Exhaustion Would Lead to Higher Prices for Patent-Protected Seeds and Traits, Less Efficient Markets, and Less Innovation.

Monsanto's current Roundup Ready license terms prohibit farmers from saving and replanting seed and authorize farmers to use Monsanto's technology to grow only a single commercial crop, and Monsanto's license fee is set in a way that reflects the limited rights conveyed. *See* Resp. Br. 34-35. If the exhaustion doctrine prevented developers of patented seeds and traits from limiting their licensees to growing a single commercial crop, prices would increase, output would decline, and intellectual property owners would be forced to use less efficient business

models as they attempted to obtain a return on their investment in innovation.

1. Seed and trait prices would rise as innovators set prices to capture the full value of the use of their inventions over many generations of seed.

If the exhaustion doctrine applied, seed and trait innovators would need to price seed to capture not just the value of a single use, but the value of using the seed and trait for many generations in the future, as well as the value of the right to breed with the seed. This price for perpetual rights to use and reuse the patented technology would necessarily be far higher than the price to use the technology a single time.

This price increase would reduce the welfare of farmers for several reasons. While there might superficially appear to be no economic difference between charging annual license fees and charging a single perpetual license fee that is the discounted present value of those annual payments, the analysis is not so simple. Given the choice, different farmers would engage in seed saving to different degrees. In fact, even before transgenic traits emerged, most soybean farmers did not save seed but instead purchased new seed of whatever variety each believed was likely to produce the greatest yield in a particular environment. *See, e.g.*, SEED INDUSTRY IN U.S. AGRICULTURE at 36 ("About 25% of soybean seed in 1997 was estimated to be farmer saved."). In a world where seed and trait patents were exhausted after the first sale, the higher up-front cost of seeds and traits (that included saved seed rights) would push farmers to

save seed when they would otherwise prefer not to do so. The majority of farmers that would prefer to take advantage of new seed varieties each year rather than save seed would experience a loss in welfare from the inability to cost-effectively purchase the best new seed varieties each year, even if the cost of a perpetual license were financially equivalent to the cost of buying new seed each year.

Farmers would also suffer because, even if the price for a perpetual license were set at the present value of annual license fees, farmers are not indifferent to high up-front costs. Many individual farmers borrow to buy seed, paying back the loan when the crop is harvested. If farmers faced a higher up-front cost, loans would need to be larger, have longer terms, and would be riskier and subject to higher interest rates.

This harm to farmers would translate into consumer harm in several ways. Farmers that lost the practical ability to buy new and improved varieties each year would suffer from reduced crop yield, reducing output and raising prices to consumers. Farmers' increased financing costs for longer term loans would also be reflected in higher prices passed along to consumers. Finally, smaller farmers with less access to capital are likely to be disproportionately harmed by a shift from annual license fees to an upfront pricing model. These farmers will face higher costs and be less effective competitors.

2. Applying exhaustion could lead to a reduction in procompetitive out-licensing.

As discussed above, if the first seed sale exhausts patent rights, absent viable contractual protections a

seed or trait developer would need to charge the full value of its traits up front. Currently developers are able to price the use of their traits or seed germplasm differently for different kinds of rights and different intensities of use. For example, the fee charged to a university for a research license will differ from the fee charged to a competing seed company for the right to incorporate a patented trait in their seed or breed with patented germplasm, and both of these fees will differ from the license fee paid by a farmer who wishes to grow a single commercial crop. Such price discrimination based on intensity of use is generally considered pro-competitive since the licensee values use of the patent in rough proportion to the benefit it gains.

Difficulty in metering the intensity of use by commercial licensees will act as a disincentive to outlicense. If a first sale exhausts rights in traits or germplasm, outlicensing to a small competitor or university poses the same commercial risks to the licensor as outlicensing to a large competitor, because any of these licensees will be able to flood the market with seed containing the innovator's intellectual property without incremental payments to the inventor. In such a world, a rational innovator will raise prices to small firms or universities that seek a license, thus reducing the ability of small firms and universities to engage in complementary innovation.

3. Applying exhaustion could raise barriers to entry and reduce the competitiveness of seed and trait markets.

A shift from an annual licensing model for seeds and traits to a higher single upfront fee will likely

lead to increased concentration in the seed and trait markets, leading to higher prices and reduced output.

Forcing farmers to choose a perpetual license would tend to create a "lock-in" effect that would make seed markets less competitive. After farmers have paid their upfront fee for a perpetual license, their incremental cost to save and replant seed would be quite small, particularly in comparison to the large upfront fee that another seed company would demand for the perpetual right to plant its competing seed.

This price disparity would deter farmers from doing business with a new seed company after the initial choice of seed, raising barriers to new entry and tending to lock in place the current market positions of seed companies. It is difficult for firms to compete with the "almost free" cost of planting the incumbent's soybeans after a farmer has paid the initial license fee, even if they have developed superior new varieties and priced them aggressively. *Cf.* Richard Gilbert & Carl Shapiro, *Antitrust Issues in the Licensing of Intellectual Property: The Nine No-Nos Meet the Nineties*, BROOKINGS PAPERS ON ECONOMIC ACTIVITY: MICROECONOMICS 283, 310-11 (1997) (describing economic theory underlying Department of Justice challenge to Microsoft's use of per-processor license fees, in which OEMs paid for Microsoft software whether they used it or not).

4. Application of patent exhaustion would distort incentives for future crop research toward hybrid seeds and away from varietal crops.

Applying patent exhaustion to authorized sale of a patented seed would distort incentives for future seed

research and innovation. Hybrid seeds, such as corn seed, cannot be saved because the crop produces seeds that lack vigor and have reduced yield compared to the parent seeds. The single-use character of hybrid corn protects the ability of seed breeders and trait developers to recover research and development costs for development of new hybrid seed varieties and traits. *See* A. Bryan Endres, *State Authorized Seed Saving: Political Pressures and Constitutional Restraints*, 9 DRAKE J. AGRIC. LAW 323, 324 (2004) (citing SEED INDUSTRY IN U.S. AGRICULTURE at 2, 19-20, 25).

In contrast, varietal seeds such as soybeans self-pollinate and may be saved and replanted by farmers from season to season without a significant decrease in yield (as Petitioner Bowman has demonstrated). Beyond the issue of farmer saved seed, competing seed breeders can easily appropriate and integrate improved self-pollinating varieties into their own product lines. *Id.* at 324-25 (citing SEED INDUSTRY IN U.S. AGRICULTURE at 18).

As a result, seed and trait developers are much more dependent on both intellectual property and contractual mechanisms to restrict seed saving and replanting to protect their research investments in improved varietals seeds than is the case for hybrid crop seeds. *Id.* at 325. Because application of patent exhaustion to the first seed sale would limit the ability of those holding intellectual property rights to prevent the saving of varietal seed, it would be much more difficult for seed breeders and trait developers to recover investments in intellectual property covering innovative new varietal seeds, while the cost-benefit calculation for hybrid seed innovators would remain unchanged. The unavoidable result would be

to distort current incentives for investing in varietal versus hybrid seed research, shifting R&D investment from varietal seeds and traits for such seeds to hybrid seeds and the traits for those seeds. *See* Dermot J. Hayes, *et al.*, *Impact of Intellectual Property Rights in the Seed Sector on Crop Yield Growth and Social Welfare: A Case Study Approach*, 12 AgBioForum 155 (2009) (case studies of impact on private research funding and crop yields of intellectual property protection suggesting ability to save seed and transactional and reputational costs of enforcing intellectual property rights in US wheat has undercut significant private research in seed improvements; whereas in hybrid corn, private sector investment is very strong). It would be poor policy to discourage investment in varietal seed innovation research while increasing in a relative sense the incentives to innovate in corn and other hybrids.

B. Applying Exhaustion Could Lead to Increased Vertical Integration, Which Could Reduce Efficiency and Competition.

Companies historically have chosen from two basic models to extract the value of intellectual property. Some companies choose to keep their intellectual property entirely within the organization by vertically integrating and engaging in all aspects of the design and production process in-house. Other companies adopt a strategy of performing certain functions in-house but also licensing others to enable the development of other products that are complementary to the patent holder's technology, thus potentially increasing the demand for the rights holder's invention. For example, Apple's iOS operating system for phones and tablets is available only on hard-

ware that Apple provides. Google, in contrast, has broadly licensed its Android operating system, which is available on phones and tablets from Google's competitors as well as from Google itself.

Both models have been used in the seed and trait business. For example, Dow's Herculex® insect protection trait was originally available almost exclusively in seed sold by Pioneer (Dow's development partner) and in Dow's Mycogen® brand. *See New Bt Trait Launched by Pioneer, Mycogen*, CORN & SOYBEAN DIGEST (June 21, 2001), *available at* http://cornandsoybeandigest.com/new-bt-trait-launched-pioneer-mycogen. In contrast, Monsanto has espoused broad licensing: its strategy has been to make its traits available in the germplasm of as many different seed companies as possible. *See, e.g.*, GianCarlo Moschini, *Competition Issues in the Seed Industry and the Role of Intellectual Property*, CHOICES, *available at* http://www.choicesmagazine.org/magazine/print.php?article=120 (discussing Monsanto's broad licensing strategy).

One of the reasons that firms integrate vertically is to lower transaction costs involved in negotiating, monitoring and enforcing contracts. *See, e.g.*, Dennis W. Carlton & Jeffrey M. Perloff, MODERN INDUSTRIAL ORGANIZATION 380 (3d ed. 2000). Accordingly, a rule that seed and trait patents are exhausted by a first sale could push inventors to a vertical integration model for a number of reasons. First, both traits and varietal parent seed are supplied to seed companies in germplasm that the licensees use to breed their own soybeans. Because the sale of that breeder stock would exhaust the innovator's rights in its invention, the innovator would need to rely on contract remedies rather than patent infringement claims against

the licensee, with all of the costs and risk that we have described above.

Additionally, a rule of exhaustion would reduce incentives to outlicense traits and germplasm because, by outlicensing, innovators take a risk that a licensee will destroy the innovator's business model by selling to customers who save and replant seeds without adequate contractual protection of the innovator.

Because the core of an intellectual property right is the right to exclude, innovators are not required to license their inventions to competitors. *See, e.g.*, *Hartford-Empire Co. v. United States*, 323 U.S. 386, 432 (1945) ("A patent owner is not in the position of a quasi-trustee for the public or under any obligation to see that the public acquires the free right to use the invention. He has no obligation either to use it or to grant its use to others."). But there is no efficiency justification for policies that *prohibit* the broad licensing of intellectual property rights. While vertical integration is not inherently inferior to a broad licensing model, denying innovators the choice to license broadly is inefficient and anticompetitive.

Providing incentives for seed and trait developers to create closed systems would harm growers by reducing competition to supply soybeans containing a particular trait. Broad trait licensing means that traits can be available in soybeans offered by dozens of soybean seed companies, instead of just companies affiliated with the trait developer. Farmers benefit from the competition among seed suppliers this incentive structure enables. The alternative model—where Monsanto traits are available only in Monsanto germplasm and Dow traits are available only in

Dow germplasm—would lead to higher prices and less innovation.

CONCLUSION

For the reasons described in this brief, the judgment of the court of appeals should be affirmed.

Respectfully submitted,

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AMICUS CURIAE BRIEF

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Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, *et al.*,

Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF OF *AMICUS CURIAE* LAW PROFESSOR CHRISTOPHER M. HOLMAN IN SUPPORT OF RESPONDENTS

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INTEREST OF *AMICUS CURIAE*[1]

Amicus curiae is a professor who teaches and writes about biotechnology patent law and policy. *Amicus* has a Ph.D. in molecular biology and biochemistry and extensive experience as a scientist and patent attorney working in the biotechnology industry. His sole interest in this case is maintenance and development of a sensible patent system that accomplishes the constitutional goal of "promot[ing] the Progress of Science and useful Arts," particularly in the areas of agricultural biotechnology and synthetic biology.

SUMMARY OF ARGUMENT

Intellectual property plays a critical role in the development of self-replicating technologies such as Monsanto's genetically modified soybeans. Without some mechanism to constrain the use and dissemination of replica products, free riders would quickly flood the market with copies and impair the innovator's ability to secure an adequate return on investment. Because of the ease with which genetically modified soybeans can be replicated by any user who comes into possession of even a single seed, whatever the source, enforceable patent protection is essential to maintain an adequate incentive for innovation.

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[1] No counsel for a party authored this brief in whole or in part, and no party or counsel for a party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than *amicus curiae* or its counsel made a monetary contribution to its preparation or submission. Counsel of record for all parties received notice at least 10 days prior to the due date of the *amicus curiae*'s intention to file this brief.

The potential impact of this case goes well beyond Monsanto and soybeans. A decision that results in the exhaustion of patent rights in copies of self-replicating products could dramatically undermine investment in a host of promising green technologies for sustainably feeding, fueling and healing the world. It might also discourage commercialization of synthetic biology, the much heralded next iteration of the biotechnology revolution. Such a dramatic and far-reaching shift in the patent landscape is certainly not warranted, particularly on the facts of this case.

It is important to recognize that it is petitioner, not the Federal Circuit, who is seeking to create an exception to the doctrine of patent exhaustion. In essence, petitioner is arguing for an expansion of the doctrine to encompass not only patented products that have been the subject of an authorized sale, but also copies of the product - copies that were never the subject of an authorized sale. Petitioner alleges that this drastic measure is warranted because the use of Monsanto's product inherently and unavoidably results in the production of copies, citing numerous hypothetical policy concerns. But these potential concerns are not presented in this case, involving a farmer who intentionally used and benefitted from Monsanto's patented technology without paying for it. To the extent any of these concerns actually become an issue in the real world, they can and should be addressed in a manner that does not effectively deprive innovators of the ability to enforce their patents with respect to self-replicating technologies.

It is informative to consider how analogous concerns have been addressed with respect to another important self-replicating technology, computer

software. Even though the use of many software programs inherently and unavoidably results in the production of a copy on the user's computer, which would technically constitute copyright infringement, it makes little sense for software companies to sue their customers for this sort of infringement. It is simply not a problem. If the potential for an infringement lawsuit became a concern, the software company could address it by explicitly authorizing purchasers to make a copy of the software, at least to the extent that such copying is an essential step in using the software. In any event, to resolve any lingering concern, Congress took the step of amending the copyright statute to explicitly exempt authorized users of computer software from liability for producing a copy that is used solely as a necessary element of running the software.

Significantly, it has not been deemed necessary to expand copyright's first sale doctrine (copyright's analog to the doctrine of patent exhaustion) in a manner that exhausts patent rights in copies of copyrighted software that are inherently created when the software is used. To do so would effectively strip software developers of meaningful copyright protection once a first round of copies has been sold and replicated. In the same way, and for much the same reasons, it is unnecessary to expand the doctrine of patent exhaustion with respect to self-replicating patented technologies like Monsanto's seeds. To the contrary, to do so would effectively deny enforceable patent protection to many self-replicating technologies.

Congress is in the position to weigh competing interests, and if necessary enact legislation to address any unique policy concerns presented by the

interplay of intellectual property rights and self-replicating technologies. It has done so with respect to computer software, and in a manner that does not deprive software producers of the ability to enforce their copyrights against free riders. It can do so with respect to patented self-replicating technologies as well. In fact, a bill is currently pending in Congress that would effectively create a compulsory license in patented seeds. Leaving aside the question of whether this would be the best approach, it illustrates that Congress is fully capable of addressing concerns expressed by petitioner and his *amici* without entirely stripping innovators like Monsanto of their patent rights.

ARGUMENT

1) The Availability of Effective Intellectual Property Protection Is Critical to Promote Innovation in Self-Replicating Technologies

Monsanto's genetically modified soybeans have been referred to as a "self-replicating" technology. This characterization, while perhaps not literally accurate, reflects an important distinction between recombinant seeds and most other patented technologies. Once a user of Monsanto's technology obtains even a single copy of the patented seed, that copy serves as a template through which the user can easily manufacture identical copies, using routine methods of cultivation and harvest. Moreover, each generation of copies serve as the template for a subsequent generation, leading to an exponential amplification of the number of copies in a process sometimes referred to as viral replication.

Outside the realm of agricultural biotechnology, most patented technologies cannot serve as a template by which users can easily create an unlimited number of perfect copies. The purchaser of a patented toaster cannot use the toaster to produce another toaster. Sale of a patented drug does not put the patient, or even the pharmacist selling the drug, in possession of the template for making copies of the drug. In contrast, the ease with which any user of a patented genetically modified seed can use the seed as a template for producing an unlimited number of copies argues in favor of the availability of effective intellectual property protection, not for the nullification of effective intellectual property which could result if the Court were to side with petitioner.

Self-replication is not unique to genetically modified seeds. Computer software is another important example of a "self-replicating" technology. Software is encoded in a digital format, and any user in possession of a single copy of patented software can use it as a template for the production of identical copies, which can in turn serve as the template for further copying and viral replication. The analogy between engineered DNA and software is striking, and results in similar policy concerns.

The fundamental basis for this close analogy between software and genetically modified seeds resides in the fact that both software and seeds comprise digitally encoded information that, when present in the appropriate environment, be it a computer or a cultivated field, can easily replicate with little if any active human intervention. With respect to software, the information is encoded in a string of ones and zeros. Genetic information is encoded in

DNA, through an ordered sequence made up of four nucleotides commonly referred to as G, A, T and C.

Self-replicating technologies like software or genetically modified seeds pose a unique problem for innovators. While the cost of developing the product and bringing it to market can be high, the nature of the technology renders the cost of reproducing the product quite low. Not only that, the means of replication is such that any user in possession of the product can easily produce copies that will compete with the innovator, ultimately impairing the innovator's ability to recoup its investment. The result is an environment where free riders threaten to chill the incentive for creation. Effective and enforceable IP is uniquely important for these sorts of technologies, allowing innovators to create a legal barrier to copying that maintains an adequate reward for creativity and innovation. If an innovator loses the ability to use intellectual property to control viral replication and dissemination of its product after the first few initial sales, the incentive for future innovation will be dramatically decreased.

2) Copyright Protects Software Innovators from Freeriding

During the 1960s and 1970s, as computer programming became an increasingly important form of technological innovation, it became apparent that some form of intellectual property protection was necessary to incentivize the optimal level of software development and dissemination. At that time, however, it was unclear whether software could be patented. Copyright was suggested as a potential candidate, and in the 1970s Congress established a National Commission on New Technological Uses of

Copyrighted Works (CONTU) to consider and make recommendations with respect to whether computer programs could and should be protected under copyright law.[2] In its report (the "CONTU Report"), the commission found that copyright could and should be extended to computer programs.[3]

In arriving at this conclusion, the commission noted that the underlying principle behind intellectual property is that "if the cost of duplicating information is small, and it is simple for a less than scrupulous person to duplicate it[,] legal as well as physical protection for the information is a necessary incentive if such information is to be created and disseminated."[4] For example, the CONTU Report pointed out that in the 19th century, when music was recorded on a brass wheel to be played on a music box, "the cost of making the wheel was inseparable from the cost of producing the final product."[5] But with the development of easily copied magnetic tapes, legal protection for recorded music became essential, and Congress responded by passing the Sound Recording Act of 1971.[6]

Similarly, with respect to software the commission found that while there had been little reason to

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[2] Pamela Samuelson, CONTU Revisited: The Case Against Copyright Protection for Computer Programs in Machine-Readable Form, 1984 Duke L.J. 663 (1984).

[3] National Commission on New Technological Uses of Copyrighted Works, Final Report at 15 (1979) [hereinafter the 'CONTU Report"].

[4] CONTU Report, *supra* note 3, at 10.

[5] *Id.*

[6] Act of October 15, 1971, Pub. L. No. 92-140, 92d Cong., 1st Sess., 85 Stat. 391.

protect the wired circuit or plug boards used to communicate instructions to early computers, the ease with which modern software can be copied weighs heavily in favor of providing effective intellectual property protection for computer programs in the form of copyright.[7] In 1980, Congress adopted the commission's recommendation and amended the Copyright Act to include a definition of "computer programs."[8] Although Congress has never enacted legislation explicitly stating that computer programs are copyrightable subject matter, the legislative history of the 1980 amendment defining computer programs in the copyright act clearly indicates that Congress intended computer programs to be treated as a form of "literary work" falling within the scope of "original works of authorship," and courts have universally interpreted the amendment as signaling congressional approval for copyright protection of software.[9]

3) Enforceable Patent Protection Is Essential for Self-Replicating Innovations in Biotechnology

Although some have argued that the close analogy between engineered DNA and computer software suggests that copyright should be made available for engineered DNA,[10] the reality is that copyright

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[7] CONTU Report, *supra* note 3, at 10.

[8] Melville Nimmer, *Nimmer on Copyrights*, § 2.04 (C)(1).

[9] *Id.* at § 2.04 (C)(2).

[10] Christopher M. Holman, *Copyright for Engineered DNA: An Idea Whose Time Has Come*, 113 W. VA. L. REV. 699 (2011); and Andrew W. Torrance, *DNA Copyright* 46 VALPARAISO UNIVERSITY L. REV. 1 (2011).

protection is currently not available for innovations in genetic engineering. In particular, copyright protection was not a viable alternative for Monsanto's genetically engineered seeds. At the time Monsanto invested in the necessary research and development to bring these important products to market, the only practical and effective form of intellectual property available was patents, and it can be assumed that Monsanto's decision to make the necessary investment was based on a reasonable expectation that adequate patent protection would allow them to recoup their investment. If this court adopts the petitioner's view of patent exhaustion, it will likely deprive Monsanto and other biotechnology innovators of effective patent protection for many genetically modified crops and other self-replicating products of biotechnology.

Petitioner's proposed expansion of the doctrine of patent exhaustion would likely have dramatic adverse consequences extending well beyond Monsanto's genetically modified soybeans. Such a decision could stymie investment in the development of a host of genetically modified agricultural products that hold the potential to address serious global concerns such as food supply and environmental degradation.[11] Genetically modified crops are expected to play a significant part in the creation of green, renewable energy sources. While some *amici* propose alternatives to patents such as prizes or the use of so-called "terminator" technology, as a practical matter it seems unlikely that such alternatives would be able to fill the void, at least in the foreseeable future.

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[11] Drew L. Kershen, *Agricultural Biotechnology: Environmental Benefits for Identifiable Environmental Problems*, 32 Environmental Law Reporter 11312 (2002).

It is important to note that self-replicating biotechnology is not confined to agriculture. One of the most promising areas of "green technology" is synthetic biology, a burgeoning field of study that represents the next era of the biotechnology revolution.[12] Synthetic biologists apply advanced methodologies for engineering and synthesizing novel DNA sequences in order to create synthetic organisms, including not only plants but also synthetic microorganisms and viruses. Many of the products of synthetic biology will be self-replicating, and thus could be severely impacted by petitioner's proposed exception to the doctrine of patent exhaustion for self-replicating technologies.

Synthetic biology captured the world's attention in 2012 when Craig Venter and his colleagues reported the successful synthesis of a functional bacterial genome composed entirely of DNA synthesized in the laboratory.[13] This scientific tour de force brought the promising technology to the policy forefront, and prompted Pres. Obama to impanel a bioethics commission to conduct a study considering the potential benefits and risks of synthetic biology, and to issue recommendations as to "any actions the federal government should take to ensure that America reaps the benefits of this developing field of science

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[12] Presidential Commission for the Study of Bioethical Issues, *New Directions: The Ethics of Synthetic Biology and Emerging Technologies* (2010), available at http://www.bioethics.gov/documents/synthetic-biology/PCSBI-Synthetic-Biology-Report-12.16.10.pdf (last visited January 16, 2012).

[13] Elizabeth Pennisi, *Genomics: Synthetic Genome Brings New Life to Bacterium*, 328 SCI. 958 (2010).

while identifying appropriate ethical boundaries and minimizing identified risk."[14]

The Presidential Commission's report, released in 2010, essentially concluded that while potential risks arising from advances in synthetic biology should be managed and monitored, the likely benefits to society far outweigh the risks.[15] With respect to intellectual property, the report "offers no specific opinion on the effectiveness of current intellectual property practices and policies in synthetic biology," but notes that "[i]ntellectual property issues in synthetic biology are evolving" and "that there are important concerns that deserve ongoing attention, especially as this rapidly developing field evolves."[16]

Currently, there are a number of companies racing to bring synthetic biology products to market. For example, Butamax Advanced Biofuels and Gevo, Inc. are investing substantially in the development of genetically engineered, self-replicating microorganisms (yeast) for producing isobutanol. *Butamax Advanced Biofuels LLC v. Gevo, Inc.*, 868 F.Supp.2d 359 (D.Del. 2012), affirmed and remanded,

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[14] Jeffery Mervis, *Obama Orders Review of Synthetic Biology*, SCIENCE, May 20, 2010, *available at* http://news.sciencemag.org/scienceinsider/2010/05/obama-orders-review-of-synthetic.html.

[15] Presidential Commission for the Study of Bioethical Issues, *New Directions: The Ethics of Synthetic Biology and Emerging Technologies* (2010), available at http://www.bioethics.gov/documents/synthetic-biology/PCSBI-Synthetic-Biology-Report-12.16.10.pdf.

[16] Presidential Commission for the Study of Bioethical Issues, *New Directions: The Ethics of Synthetic Biology and Emerging Technologies* 121 (2010), available at http://www.bioethics.gov/documents/synthetic-biology/PCSBI-Synthetic-Biology-Report-12.16.10.pdf.

Butamax(TM) Advanced Biofuels LLC v. Gevo, Inc., 486 Fed.Appx. 883 (Fed. Cir. 2012). Isobutanol is an industrial chemical that can be blended with gasoline-based fuels as an alternative to ethanol, the current dominant biofuel in gasoline blends. Isobutanol has a higher energy content and is less corrosive than ethanol, so could provide a superior source of renewable, carbon-neutral energy.

Another synthetic biology company, Codexis, Inc., is developing and commercializing bio-based processes for the production of valuable chemicals that are not only more efficient than traditional processes, but also better for the environment.[17] For example, in 2006 Codexis was awarded the US Environmental Protection Agency's Presidential Green Chemistry Challenge Award for successfully engineering a synthetic metabolic pathway capable of producing a key intermediate in the production of atorvastatin (Lipitor).[18]

Amyris, Inc. was founded by synthetic biologists at UC Berkeley, with a mission to use synthetic biology to "deliver impactful solutions to the world's most significant problems."[19] One of their reported successes has been the engineering of a synthetic microbe capable of efficiently producing artemisinic

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[17] Codexis, available at http://www.codexis.com/ (last visited January 22, 2013).

[18] Codexis, *Codexis Awarded U.S. Environmental Protection Agency's Presidential Green Chemistry Challenge Award*, available at http://ir.codexis.com/phoenix.zhtml?c=208899&p=irol-newsArticle&ID=1181061&highlight= (dated June 26, 2006). Lipitor, one of the best-selling drugs in the world, is used to lower cholesterol.

[19] Amyris, *About Amyris*, available at http://www.amyris.com/en/about-amyris/our-story (last visited January 22, 2013).

acid, a precursor for the low-cost anti-malarial drug, artemisinin. Funding for this project was provided through a grant from the Bill & Melinda Gates Foundation to the Institute for OneWorld Health.[20] Amyris has granted a royalty-free license to this technology to Sanofi-Aventis for the commercialization of artemisinin-based drugs, which hopefully will provide substantial benefits to developing countries in need of low-cost antimalarial products.

In 2011, Amyris announced a collaboration with Michelin to develop and commercialize renewable isoprene.[21] Isoprene is an important chemical building block used in the production of rubber tires and other products that use synthetic and natural rubbers.

Another synthetic biology company, Guild Biosciences, is applying the tools of synthetic biology to engineer viruses and single-celled organisms for use as biosensors capable of detecting and ameliorating a variety of harmful agents in the environment.[22] For example, Guild is developing bacteriophage biosensors with the ability to detect specific bacterial pathogens in food, human fluid and environmental samples.[23] The application of Guild's bacteriophage tech-

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[20] Amyris, *Artemisinin – Anti-Malarial Therapeutic*, available at http://www.amyris.com/en/markets/artemisinin (last visited January 22, 2013).

[21] Amyris, *Amyris and Michelin Announce Collaboration to Develop and Commercialize Renewable Isoprene*, available at http://www.amyris.com/en/newsroom/214-amyris-and-michelin-announce-collaboration-to-develop-and-commercialize-renewable-isoprene (dated Sept. 28, 2011).

[22] Guild Biosciences, available at http://guildbiosciences.com/ (last visited January 22, 2013).

[23] *Id.* Bacteriophage are viruses that specifically target bacteria.

nology to pathogen detection has significant potential as a phytopathogen diagnostic (to limit the impact of crop disease) or in detecting biowarfare bacteria.[24]

Guild Biosciences has also genetically engineered a synthetic yeast capable of functioning as a biosensor-biocatalyst for the detection and biodegradation of paraoxon.[25] Paraoxon is a poisonous organophosphate pesticide. Not only does Paraoxon pose an environmental problem, there is a concern that an organophosphate nerve agent could be released as a chemical weapon. Guild also aspires to use its technology to produce a synthetic organism that can quickly and accurately diagnose anthrax or plague.[26]

4) Petitioner Is Arguing for an Exception to the Doctrine of Patent Exhaustion for Self-Replicating Technologies

Although petitioner alleges that the Federal Circuit has created an exception to the patent exhaustion doctrine, in fact it is petitioner that is seeking an exception. Under established law, the patent exhaustion doctrine applies to products that have been the subject of an authorized sale. The doctrine has never

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[24] Guild Biosciences, Biosensors Research, available at http://www.guildbiosciences.com/index.php/biosensors-research/ (last visited January 22, 2013).

[25] Schofield, D.A., Westwater, C., Barth, J.L. and DiNovo, A. A. 2007. Development of a yeast biosensor-biocatalyst for the detection and biodegradation of paraoxon. Applied Microbiology and Biotechnology, 76(6):1383-94.

[26] Guild Biosciences, Biosensors Research, available at http://www.guildbiosciences.com/index.php/biosensors-research/ (last visited January 22, 2013).

been construed to extend to copies of a product that was the subject of an authorized sale.

In this case, the products of the authorized sale were the first generation soybeans, and Monsanto is not asserting any patent rights with respect to those seeds. Instead, Monsanto is asserting patent rights with respect to subsequent generation seeds that are distinct from any seed that was the subject of an authorized sale. In arguing that the sale of a patented product exhausts patent rights in copies of the product, which were not the subject of any authorized sale, it is petitioner who is seeking an exception, not the Federal Circuit.

5) The Self-Replicating Nature of Genetically Modified Seeds Does Not Warrant Petitioner's Proposed Expansion of the Scope of Patent Exhaustion

In essence, petitioner argues that because the use of Monsanto's patented seed by farmers inherently results in the production of copies of the patented seed, the patent exhaustion doctrine should be expanded to encompass not only the seed that was the subject of an authorized sale, but also any copies of the seed. Petitioner and his *amici* offer a parade of horribles that they suggest could ensue if Monsanto were to retain patent rights with respect to copies of its seeds. However, even if one is to accept that at least some of these concerns are plausible, there are mechanisms for dealing with them that do not require stripping innovators in agricultural biotechnology from the ability to enforce their patents against knowing and intentional appropriators of the technology, such as petitioner.

To illustrate this point, it is instructive to consider how the law addresses similar concerns with respect to another self-replicating technology, computer software. As pointed out by an *amicus* supporting petitioner, computer programs are typically copied from a computer's permanent memory into temporary memory when they are running.[27] In other words, when an authorized purchaser of software uses that software, he is inherently making a copy of that software, in the same way farmers inherently make copies of a Monsanto soybean when they plant, cultivate and harvest it. Technically, the copy of the software generated during normal use of the software constitutes copyright infringement.[28] According to the logic of petitioner's argument, this would seem to be a huge problem, since legitimate purchasers of software will inevitably infringe when they use the software, and hence could be sued for copyright infringement.

Under copyright law, the first sale doctrine functions as an analog to patent exhaustion. The first sale doctrine provides that "the owner of a particular copy or phonorecord lawfully made under [the Act], or any person authorized by such owner, is entitled, without the authority of the copyright owner, to sell or otherwise dispose of the possession of that copy or phonorecord." 17 U.S.C. § 109 (a). While the first sale doctrine exhausts copyright with respect to a copyrighted item that has been the subject of an authorized sale, it does not extinguish copyright in copies of

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[27] See also Robert Brauneis and Roger Schecter, COPYRIGHT: A CONTEMPORARY APPROACH (2012).

[28] *MAI Systems Corp. v. Peak Computer, Inc.*, 991 F.2d 511 (9th Cir. 1993); Robert Brauneis and Roger Schecter, COPYRIGHT: A CONTEMPORARY APPROACH (2012).

the purchased item. For example, the purchaser of a music CD is free to do what he will with that particular CD, but the first sale doctrine does not authorize him to create copies of the CD and sell them in competition with the copyright owner.

But observe that if we were to apply the rationale set forth by the petitioner and his *amici* in this case to copyrighted software, we would need to create an exception to the first sale doctrine that exhausts copyright in copies of software that has been the subject of an authorized sale. After all, use of the software inherently involves making a copy of the software, so under petitioner's logic this expansion of the first sale doctrine to include copies would be necessary to prevent innocent users from being sued for infringement. In fact, however, there is no such exception to the first sale doctrine for software. If such an exception were created, it would effectively strip software owners of the ability to enforce their copyrights against copyists. Nevertheless, consumers are not being sued for using lawfully purchased copyrighted software.

So why don't we have a problem with software copyright, given that the use of software inevitably results in the production of copies that technically infringe the software developer's copyright? For one thing, it would make no sense for software companies to sue legitimate purchasers for simply using their software, regardless of the fact that it results in the production of copies. Consumers would not buy software if its use inherently subjected the user to liability for copyright infringement. Software companies and their customers understand that legitimate purchasers are permitted to use the software, and will not be sued based on a technical act of infringement.

If it did become an issue, and customers were concerned about the possibility of being sued for infringement, the software company could reassure them by explicitly granting authorized purchasers the right to make copies of the software, at least when such copies are made in the natural course of using the software. The scope of this license would be limited with respect to the ultimate use of the copy. While purchasers would be authorized to use copies to the extent necessary to utilize the functionality of the program, the copyright owner would retain copyright in the copies, which could be enforced against those exceeding the scope of the license, for example by loading the software on multiple computers, or distributing copies freely on the Internet, or selling them in competition with the copyright owner. Without this retained copyright in the copies, these copies could become the subject of viral replication, quickly depriving the copyright owner of subsequent sales.

Moreover, if Congress believes that the inherent copying that occurs when software is used could potentially result in liability for users, it can address the issue by statute. In fact, Congress has done just that. 17 U.S.C. § 117 states in part:

> Notwithstanding the provisions of section 106 [defining infringement], it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy or adaptation of that computer program provided . . . that such a new copy or adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner . . .

Significantly, neither Congress nor the courts have deemed it necessary to modify the first sale doctrine in order to address the concern. The statutory fix provided by 17 U.S.C. § 117 resolves any ambiguity, and clarifies that under no circumstances can the purchaser of copyrighted software he sued for infringement simply because use of the software inherently results in the production of a technically infringing copy. Note that instead of granting a blanket license to make copies, it limits the scope of the license based on the use that is made of the copy. Even if the copy is made as an essential step in the utilization of the computer program, 17 U.S.C. § 117 does not permit the owner of the computer program to use the copy in a manner contrary to the legitimate business interests of the copyright owner, *e.g.*, by distributing copies to other computer users.

The same logic that has been applied to computer software should apply to Monsanto's patented seeds. Clearly farmers would not buy Monsanto seeds if they thought they would be sued for patent infringement based on their most natural use, *i.e.* by planting them, cultivating them, and harvesting the progeny seed, which incidentally constitute distinct copies of the purchased seed. To resolve any ambiguity, Monsanto enters into a licensing agreement with these farmers that explicitly grants them the right to reproduce the seeds and sell those progeny seeds for use as food or animal feed. Quite understandably, Monsanto does not authorize the replanting of the progeny seeds, which would deprive the company of subsequent sales of its product. Nor does it forfeit entirely its patent rights.

If Congress thought that a patent owner like Monsanto might sue farmers for patent infringement

based on copying that occurs during natural use of their products, it could enact legislation analogous to 17 U.S.C. § 117. Congress has not taken this step, at least as of yet, and the potential policy concerns associated with patented second-generation seeds cited by petitioner and his *amici* do not appear to have come to pass.

Nonetheless, Congress is well aware of the issues presented by petitioner and his *amici*, and will no doubt address them if such action is deemed necessary. In fact, on January 4, 2013, Rep. Marcia C. Kaptur (D-Ohio) reintroduced the Seed Availability and Competition Act (H.R. 193) that would "require persons who seek to retain seed harvested from the planting of patented seeds to register with the Secretary of Agriculture and pay fees set by the Secretary for retaining such seed."[29] The fees would be deposited in a "Patented Seed Fund" administered by the secretary for payment to patent holders. Farmers paying the fees would "not be bound by any contractual limitation on retaining such seed, or by any requirement to pay royalties or licensing or other fees, by reason of the patent, for retaining such seed."

In other words, H.R. 193 would create a compulsory license with respect to patents on harvested seeds. Leaving aside the question of whether this would be the best approach, it illustrates that Congress is fully capable of addressing concerns expressed by petitioner and his *amici* without entirely stripping innovators like Monsanto of their patent rights.

CONCLUSION

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[29] H.R. 193 - Seed Availability and Competition Act of 2013 (113th Congress).

One can imagine hypothetical fact patterns involving patented genetically modified seeds that create novel issues pushing the boundaries of patent law and policy, such as the question of what it means to "make" a self-replicating product, or the limits of liability for inadvertent or unavoidable infringement. Petitioner and his *amici* have cited a number of such potential scenarios. While these are fascinating topics of discussion for law professors, they do not reflect the facts of this case, and this is clearly not the case to address them, particularly when Congress is already in the process of considering potential responses to the growing use of patented genetically modified crops. This Court should affirm the decision below and decline petitioner's invitation to dramatically expand the scope of the patent exhaustion doctrine in a manner that would effectively eliminate patents as an incentive for innovation in critically important self-replicating technologies, particularly in agricultural biotechnology and synthetic biology.

Respectfully submitted,

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AMICUS CURIAE BRIEF

No. 11-796

FOR ARGUMENT

IN THE

JAN 1 3 2013

Supreme Court of the United States

VERNON H. BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, *et al.*,

Respondents.

ON WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

BRIEF OF INTELLECTUAL PROPERTY OWNERS ASSOCIATION IN SUPPORT OF RESPONDENTS

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The "Flavr Savr" tomato from Calgene. *See* G. Bruening & J.M. Lyons, *The Case of the FLAVR SAVR Tomato*, CAL. AGRIC., July–Aug. 20007.....11

INTEREST OF *AMICUS CURIAE*

Amicus curiae Intellectual Property Owners Association (IPO) is a trade association representing companies and individuals in all industries and fields of technology who own or are interested in U.S. intellectual property rights.[1] IPO's membership includes more than 200 companies and more than 12,000 individuals who are involved in the association either through their companies or as inventor, author, executive, law firm, or attorney members. Founded in 1972, IPO represents the interests of all owners of intellectual property. IPO regularly represents the interests of its members before Congress and the U.S. Patent and Trademark Office and has filed *amicus curiae* briefs in this Court and other courts on significant issues of intellectual property law. The members of IPO's Board of Directors, which approved the filing of this brief, are listed in the Appendix.[2]

---

1. No counsel for a party authored this brief in whole or in part, and no such counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than the *amicus curiae* or its counsel made a monetary contribution to its preparation or submission. Both parties consented to the filing of this brief through general consent forms filed with the Court.

2. IPO procedures require approval of positions in briefs by a two-thirds majority of directors present and voting. Monsanto Co. is a member of IPO's Board of Directors; however, it did not participate in the discussions regarding or vote on the decision to file this brief and did not participate in its preparation.

INTRODUCTION

IPO files this *amicus* brief in support of the respondent, Monsanto Co. Specifically, IPO believes that the Federal Circuit correctly found that the doctrine of patent exhaustion does not absolve Mr. Bowman from infringement. The commodity seeds planted by Mr. Bowman were not the original seeds that were the subject of an authorized sale by Monsanto. While patent exhaustion would have prevented Monsanto from restricting the distribution or use of those original seeds, those original seeds were completely consumed (as intended) in the growing of the first crop. The commodity seeds that resulted from the first crop were not the subject of an authorized sale by the patentee – Monsanto never sold those particular commodity seeds. Instead, the commodity seeds constitute an entirely new manufacture and, as such, are not subject to the doctrine of patent exhaustion under this Court's jurisprudence.

ARGUMENT

I. Monsanto's patent rights were not exhausted with regard to the unauthorized making of new patented seed.

The decisions of this Court have never permitted the making of new patented articles based on the doctrine of patent exhaustion. For example, in *United States v. Univis Lens Co., Inc.*, 316 U.S. 241 (1942), makers of lens blanks for reading glasses imposed restrictions on three different end users with respect to the prices that the users could charge for the ultimate eyeglass product. In an antitrust action the Court struck down these restrictions

as exceeding the rights conferred by the patent grant. According to the Court, "incident to the purchase of any article, whether patented or unpatented, is the right to use and sell it, and upon familiar principles the authorized sale of an article which is capable of use only in practicing the patent is a relinquishment of the patent monopoly with respect to the article sold." *Univis*, 316 U.S. at 249 (citations omitted). The Court thus permitted the users to freely use and sell the actual patented article that was the subject of the sale. Tellingly, however, the Court did not countenance making brand new lens *blanks*, the patented article itself. *Id.*

In the Court's more recent decision in *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008), LGE imposed restrictions on the use of computer chipsets on end users, limiting them to be used only with Intel components. As in *Univis* (which the *Quanta* Court expressly cited as controlling authority), these restrictions exceeded the patent grant by attempting to limit how the Intel chipsets could be used after an authorized sale. The Court distinguished arguments that such uses constituted a "making" by recognizing that no new chipsets were made but rather what was made and sold was a product that included the patented chipsets. *Quanta*, 553 U.S. at 634. In finding that patent exhaustion applied, the Supreme Court utilized a three-part test based on *Univis*. Under this test, patent exhaustion applies when: (1) the product sold does not have any reasonable noninfringing use, (2) the product sold substantially embodies the essential features of the patented invention, and (3) there is an authorized, unconditional sale of the patented invention. *Id.* at 633-36, 638.

Here, Monsanto's rights to its patented seed are infringed by Mr. Bowman's replanting, which is not merely a use but a complete remaking of new seeds. This in and of itself distinguishes Mr. Bowman's new act of infringement from Quanta's noninfringing use of Intel chipsets after the patent rights were exhausted by sale. The exhaustion argument raised by Mr. Bowman fails to satisfy at least two of the prongs of the test enunciated in *Quanta*. With respect to the first prong, the commodity seed has uses other than replanting (including uses as animal feed and in human foodstuffs.) This stands in contrast to the chipsets in *Quanta* whose only use was as a component in the ultimate product. But more significantly, with respect to the third prong, there was no authorized, unrestricted sale by Monsanto of the seed used by Mr. Bowman that would exhaust patentee's patent rights. The original, authorized seed sold by Monsanto was consumed in the first planting. The commodity seed purchased by Mr. Bowman was neither made by nor sold by Monsanto. As such, the commodity seeds do not constitute an authorized sale by the patentee to which exhaustion attaches.

a. The lack of patent exhaustion here is consistent with this Court's precedent concerning repair and replacement

In *Aro Manufacturing Co., Inc. v. Convertible Top Replacement Co., Inc.*, 365 U.S. 336 (1961), the Court held that it was permissible to repair the worn fabric on the patented convertible automobile based on the purchaser's right to maintain the patented article for its intended use. The outcome in *Aro* stands in contrast to the Court's holding in *American Cotton-Tie Co. v. Simmons*, 106 U.S. 89 (1882) where reconstruction of the patented

tie for cotton baling was held to be infringing. In *Cotton-Tie*, the patented article (a tie comprising a band and a buckle) was destroyed during its use (wherein the tie was used to bale cotton and then cut and the cut tie processed as scrap metal). *Cotton-Tie*, 106 U.S. at 94. Simmons' reconstruction of the patented ties from such scrap metal was found by the Court to be reconstruction, due in part to the destruction of the tie during its permissible use under the patent. *Id.* at 95.

Mr. Bowman's replanting of commodity seed was no mere "repair" of the patented article; as in *Cotton-Tie*, the original seed sold by Monsanto had performed its use and had been consumed in the very first planting. Like in *Cotton-Tie*, Mr. Bowman reconstructed the crop by replanting the commodity seed (thereby creating a third generation of seed capable of reconstructing a third crop), and it was this act that constituted an infringing reconstruction of Monsanto's patented seed. These activities by Mr. Bowman constitute intentional infringement of Monsanto's patent rights because they resulted in an unauthorized making of a new crop of Monsanto's patented seed. This is impermissible reconstruction and is not subject to the doctrine of patent exhaustion.

b. Mr. Bowman's argument improperly conflates "making" and "using" an invention

Mr. Bowman argues that his replanting is not an infringing act because all of Monsanto's patent rights are exhausted by sale of the recombinant seed. In addition to being inconsistent with this Court's established precedent regarding exhaustion, Mr. Bowman's argument also

ignores the statutory distinction between "making" an invention and "using" an invention.

A patentee's right to exclude is provided by statute as making, using, selling, offering to sell or importing the patented article. 35 U.S.C. §271 (a). While these activities may overlap in practice, they are distinct activities recited in the statute. More importantly, they have been recognized by this Court as distinct patent rights for more than 150 years. *See United States v. Gen. Elec. Co.*, 272 U.S. 476, 490 (1926) ("The patentee may make and grant a license to another to make and use the patented articles but withhold his right to sell them. The licensee in such a case acquires an interest in the articles made. He owns the material of them and may use them. But if he sells them he infringes the right of the patentee, and may be held for damages and enjoined."); *Wilson v. Rousseau*, 45 U.S. 646, 683 (1846) ("[W]hen in connection with the simple right to use, the exclusive right to make and vend being in another, the right to use the thing patented necessarily results in a right to use the machine, and nothing more"). Disregarding these distinctions, as Mr. Bowman does when he argues that his infringing replanting is merely a "use" permitted by purchase of Monsanto's patented seed, would improperly read these distinctions out of the statute. Such an interpretation of the statute would render the word "making" in §271(a) mere surplusage, contrary to this Court's rubrics for proper statutory construction. *See Bd. of Tr. of Leland Stanford Junior Univ. v. Roche Molecular Sys., Inc.*, 131 S. Ct. 2188, 2196 (2011) (relating to the application of the Bayh-Dole Act); *Bailey v. United States*, 516 U.S. 137, 146 (1995) ("We assume that Congress used two terms because it intended each term to have

a particular, nonsuperfluous meaning"); *Inhabitants of Montclair, County of Essex v. Ramsdell*, 107 U.S. 147, 152 (1883) ("It is the duty of the court to give effect, if possible, to every clause and word of a statute, avoiding, if it may be, any construction which implies that the legislature was ignorant of the meaning of the language it employed.").;

c. Mr. Bowman's infringement is not absolved by using commodity seed.

Mr. Bowman attempts to distinguish the Federal Circuit's earlier decisions, in *Monsanto v. Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006) and *Monsanto v. McFarling*, 302 F.3d 1291 (Fed. Cir. 2002), that replanting Monsanto's patented seed was infringing by relying on purchase of the seed from a so-called "commodity grain" elevator. This argument is unavailing because the grain elevator cannot transfer rights to Mr. Bowman that it never had.

The facts in *Scruggs* and *McFarling* illustrate the point. In *McFarling*, the infringer bought seed and entered into a technology agreement whereby he agreed not to replant Monsanto's patented seed. In *Scruggs*, the infringer bought seed but did not enter into the technology agreement. In both cases, the infringers replanted the seed, and in both cases patent infringement, not breach of contract, was found. Whether in violation of the terms of the technology agreement or not, replanting of a new crop of Monsanto's patented seed was deemed an infringement, *inter alia*, because it amounted to unauthorized making of the claimed invention.

d. Mr. Bowman advocates a position contrary to this Court's precedent concerning the interplay of the Patent Act and the Plant Variety Protection Act.

Mr. Bowman attempts to read into the utility patent law of Title 35 an exemption for seed saving that exists in the Plant Variety Protection Act (PVPA; 7 U. S. C. § 2321 *et seq.*). Such an interpretation of the patent statute is unnecessary and contrary to this Court's holding in *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l., Inc.*, 534 U.S. 124 (2001). In *J.E.M.*, the Court expressly held that utility patents could be granted for plants and that patent protection was not limited to the Patent Act (35 U. S. C. §§ 161-164) or the PVPA. *J.E.M.*, 534 U.S. at 127. The Court's opinion noted that there were "some 1,800 utility patents for plants, plant parts, and seeds"[3] granted by 2001, including patented plants produced by conventional plant breeding techniques and genetically engineered plants comprising useful traits transferred from other organisms. *Id.* Although the opinion was directed towards utility patent-eligible plants, the Court also set forth distinctions between utility patent and PVPA protection that are contrary to Mr. Bowman's position.

Specifically, this Court contrasted the scope of protection available under utility patents with the requirements under the PVPA, stating that patentability requirements were more stringent than what the PVPA required for protection. *Id.* at 138. One of these distinctions was that the PVPA provides an exemption for farmers so that they can save seed produced from a legal purchase of

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3. That number stands at more than 4,100 today (www.uspto.gov).

the protected variety for replanting a new crop. 7 U.S.C. § 2543. The Court noted that the utility patent statute contains no such exemption, the very exemption that Mr. Bowman asks the Court to *de facto* provide by holding that his replanting was an exhausted use. *J.E.M.*, 534 U.S. at 140. Albeit in a different context, the Court has already set forth this distinction between utility patent protection and the protections available under a PVPA certificate, and found no evidence that Congress intended to preclude utility patents for plants or incorporate special protections (like the saved seed exemption) from the PVPA into utility patent law. Indeed, one of the bases by which this Court found that protecting plants under the PVPA and the utility patent statute were not inconsistent was that "the protections afforded by a utility patent are greater than those afforded by a PVP certificate." *Id.* at 142. The Court stated that "utility patent holders receive greater rights of exclusion than holders of a PVP certificate" and, "[m]ost notably, there are no exemptions for research or saving seed under a utility patent." *Id.* at 143. This Court should not now vitiate those distinctions provided by Congress by incorporating by judicial decision an exemption on saving seed found in the PVPA but not in the utility patent statute.

II. Upholding Monsanto's patent rights does not create a special exemption for patented seed.

Mr. Bowman argues that finding that his unauthorized replanting constitutes an infringing "making" of Monsanto's patented seed would amount to special treatment for recombinant seed technology. Mr. Bowman is wrong for at least two reasons. First, infringement liability based on copying patented technology is not unique to seeds, but is a property shared with other

technologies, including computer software and the emerging field of nanotechnology. Second, this Court has recognized for over a century the need to consider how the law is applied to new technologies on a case-by-case basis, citing with approval the sentiments of the First Circuit in *Goodyear Shoe Machinery Co.* v. *Jackson*, 112 F. 146, 150 (1st Cir. 1903): "Each case, as it arises, must be decided in the light of all the facts and circumstances presented, and with an intelligent comprehension of the scope, nature, and purpose of the patented invention, and the fair and reasonable intention of the parties." *Aro Manufacturing Co., Inc. v. Convertible Top Replacement Co., Inc.*, 365 U.S. 336, 376 (1961) (quoting *Goodyear*, 112 F. at 150).

Moreover, Mr. Bowman's characterization of Monsanto's patented seed as "self-replicating" is a red herring that disregards Mr. Bowman's own affirmative infringing actions. Mr. Bowman purchased the commodity seeds, replanted the seeds, grew the seeds in the presence of Roundup® to eliminate undesirable weeds from his crop and reaped the economic rewards of his infringing actions. Mr. Bowman cannot avoid the consequences of his agency in performing these infringing actions merely by characterizing Monsanto's patented seeds as "self-replicating;" the commodity seeds did not plant themselves.

a. Precluding replanting of patented seeds is necessary to promote this technology

The fruits of the second "green revolution" provided by recombinant seeds such as Monsanto's seeds here are important not only for the U.S. economy but to address the needs of a burgeoning global population. Genetically modified varieties of agricultural staples including corn,

canola, cotton, papaya, squash, and soybeans are grown in the U.S. In 2005, these varieties increased crop production by 8.3 billion pounds while cutting production costs (by $1.4 billion) and pesticide use (by 69 million pounds.)[4] Beneficial traits that have been introduced into various crop species include slowed ripening and improved shelf life in tomatoes,[5] herbicide-resistant cotton, sugar beets, maize, soybeans,[6] improved nutritional value, such as "golden rice" containing carotene as a cure for Vitamin A deficiency,[7] drought,[8] frost,[9] and nitrogen starvation,[10] and

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4. Brief for Croplife International as *Amicus Curiae* Supporting Neither Party at 5, *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008) (No. 06-937) *cited in* Tod Michael Leaven, *Recent Developments: The Misinterpretation of the Patent Exhaustion Doctrine and the Transgenic Seed Industry in Light of Quanta v. LG Electronics*, 10 N.C. J.L. & TECH. 119, 124 n.28 (2008).

5. The "Flavr Savr" tomato from Calgene. *See* G. Bruening & J.M. Lyons, *The Case of the FLAVR SAVR Tomato*, CAL. AGRIC., July–Aug. 2000, at 7.

6. *See* CLIVE JAMES, INT'L SERVICE FOR THE ACQUISITION OF AGRI-BIOTECH APPLICATIONS, EXECUTIVE SUMMARY, BRIEF 43, GLOBAL STATUS OF COMMERCIALIZED BIOTECH/GM CROPS: 2011 8 (2001).

7. Guangwen Tang et al., *Golden Rice is an Effective Source of Vitamin A*[1-4], 89 AM. J. CLIN. NUTR. 1776, 1776 (2009).

8. ROBERT PAARLBURG, DROUGHT TOLERANT GMO MAIZE IN AFRICA, ANTICIPATING REGULATORY HURDLES, INTERNATIONAL LIFE SCIENCES INSTITUTE, (2011), *available at* http://www.ilsi.org/Documents/2011%20AM%20Presentations/CERAPaarlberg.pdf.

9. Cathy Lundmark, *Searching Evolutionary Pathways*, 56 BIOSCIENCE 552, 552 (2006).

10. ROB RENNIE & PATRICK HEFFER, ANTICIPATED IMPACT OF MODERN BIOTECHNOLOGY ON NUTRIENT USE EFFICIENCY, TFI/FIRT FERTILIZER OUTLOOK AND TECHNOLOGY CONFERENCE (2010),

insect- or virus resistance.[11] In addition to agricultural applications, recombinant organisms such as algae are a vital part of the developing biofuels industry.[12] None of the benefits of these inventions would survive as viable economic alternatives if the purchaser of a first seed could reconstruct the patented invention by replanting patented seed indefinitely, which would occur if "making" is considered an exhausted "use." The consequences were illustrated in *Monsanto Co. v. McFarling*, 363 F.3d 1336 (Fed. Cir. 2004), which estimated that "a farmer planting one bag of soybeans in year one would reap ... 46,656 bags to replant in year four." *McFarling*, 363 F.3d at 1347. No technology could survive if infringers were permitted to plunder the fruits of patented invention in this manner.

b. Seeds are not the only technologies that would be negatively impacted if "making" is considered an exhausted "use."

Patented seeds are not the only technologies where "making" has properly been considered as a separate infringing activity. For example, in *Amgen*, the district court held that "growing up" recombinant cells producing erythropoietin constituted an infringing "making." *Amgen, Inc. v. Elanex Pharms., Inc.*, No. C93-1483D, 1996

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available at http://www.fertilizer.org/ifa/layout/set/print/content/view/full/4050/%28offset%29/220.

11. *See* Mark Vaeck et al., *Transgenic Plants Protected From Insect Attack*, 328 NATURE 33, 33–37 (1987).

12. Damien Carrington, *GM Microbe Breakthrough Paves Way for Large-Scale Seaweed Farming for Biofuels*, THE GUARDIAN (Jan. 19, 2012, 2:00 PM), http://www.guardian.co.uk/environment/2012/jan/19/gm-microbe-seaweed-biofuels.

U.S. Dist. LEXIS 22015, at *9 (W.D. Wash. Feb. 6, 1996) ("According to Amgen, 'make' should be interpreted in its ordinary sense; thus, when Elanex 'grew up' its cells it made more cells, thereby infringing the [patent].") If the doctrine of patent exhaustion were improperly extended to the routine growth of recombinant host cells, this could have a devastating effect on investment in the production of new biologic drugs made from recombinant cells. If patents on recombinant cells used to make new drugs could be easily circumvented by reliance on the exhaustion doctrine, the deleterious effects on the pharmaceutical industry could be even greater than in the agricultural arena.[13]

Permitting unauthorized copying of a patented article as a use after an authorized sale would also negatively affect industries where the patented article must be copied for use. For example, in the computer industry, patented computer programs are sold subject to a license agreement and then copied onto the destination computer for use. This "making" of a separate copy on the destination computer does not entitle the purchaser to make multiple other copies for multiple computers without obtaining the patentee's permission, by way of license, to do so. In like manner, Monsanto sold its original seeds subject to a license agreement, yet that original sale did not exhaust Monsanto's right as a patentee to enjoin Mr.

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13. For example, any number of biologic drugs has been developed that, according to a recent Federal Trade Commission report, "have improved medical treatments, reduced suffering, and saved the lives of many Americans." FEDERAL TRADE COMMISSION REPORT, EMERGING HEALTH CARE ISSUES: FOLLOW-ON BIOLOGIC DRUG COMPETITION i (2009), *available at* www.ftc.gov/os/2009/06/P083901biologicsreport.pdf.

Bowman's making and use of "copied" commodity seeds. Similarly, computer code is not "self-replicating" (although networked computers could no doubt be programmed to disseminate the program throughout all the computers attached to the Internet) because programming and dissemination would require the intervening agency of an infringer to make multiple copies of the program and benefit thereof. Such infringing activity is directly analogous to Mr. Bowman's acts of replanting the commodity seed, growing the crop in the presence of Roundup® to eliminate weeds and reaping the resulting economic benefit.

A similar argument can be made for the new area of nanotechnology, which has the possibility of producing "self-replicating" machines.[14] Although this technology is only in its infancy, the negative effects of any construction of the patent law that permits "making" to be an exhausted "use" can be expected to retard investment in further development of this technology.

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14. *See* ROBERT A. FREITAS & RALPH C. MERKLE, KINEMATIC SELF-REPLICATING MACHINES (Landes Bioscience, 2004).

CONCLUSION

IPO urges this Court to find that Mr. Bowman's replanting of commodity seed was an infringing act that constituted a reconstruction of Monsanto's patented recombinant seed. Any other decision would unnecessarily impede progress in the agricultural biotechnology field, with deleterious consequences for developing technologies to address the need for increasing food production and reducing hunger, in the U.S. and globally. Such a decision is unnecessary to properly constrain the exercise of the patent grant and a decision in Monsanto's favor is entirely consistent with more than a century of this Court's precedent on the proper provenance of the patent exhaustion doctrine.

Respectfully submitted,

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AMICUS CURIAE BRIEF

No. 11-796

IN THE

Supreme Court of the United States

VERNON HUGH BOWMAN

Petitioner,

v.

MONSANTO CO. ET. AL.

Respondents,

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF OF *AMICUS CURIAE* KNOWLEDGE ECOLOGY INTERNATIONAL IN SUPPORT OF PETITIONER

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INTEREST OF AMICUS CURIAE[1]

Knowledge Ecology International ("KEI") is an international non-profit, non-governmental organization that searches for better outcomes, including new solutions, to the management of knowledge resources. In particular, KEI is focused on the management of these resources in the context of social justice. KEI is drawn to areas where current business models and practices by businesses, governments or other actors fail to adequately address social needs or where there are opportunities for substantial improvements. Among other areas, KEI has expertise in access to medical technologies and access to knowledge issues.

KEI is concerned about the implications of the Federal Circuit decision in the present case because limits on the patent exhaustion doctrine will impact market competition, not only with respect to genetically modified seeds, but for all self-replicating technology. If the Federal Circuit decision is permitted to stand, such limits may have profound effects—potentially of unknown consequence—on other biotechnology industries that may use self-replicating technologies, including those involving cell lines, DNA or RNA sequences, virus strains, and microorganisms.

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[1] The parties have consented to the filing of this brief. Both Petitioner's consent to the filing of this brief as well as Respondent's consent have been filed with the Clerk of Court. No counsel representing any party to the case authored this brief, in whole or in part, and no counsel or party made any monetary contribution to the preparation or submission of the brief.

SUMMARY OF THE ARGUMENT

The patent exhaustion doctrine is a common law tradition that has existed in the United States for over 150 years. This doctrine, analogous to the statutorily codified "first sale" doctrine of Copyright Law, limits the patent owner's control to the first sale of the technology. Once the first authorized sale occurs, the patent owner's right to the invention are considered exhausted. This Court has not favored categorical exceptions to the patent exhaustion doctrine and has instead robustly applied these principles.

The present case turns on the application of patent exhaustion to the relatively new field of self-replicating technologies. This case involves Monsanto's patented genetically modified seeds, known as Roundup Ready® seeds. These seeds are self-replicating in the sense that, once planted, new, second-generation seeds result. As replication is a natural function of seeds, such self-replication is capable of taking place, even absent any human intervention.

Monsanto, through contractual agreements, elicited promises from licensed growers not to save second-generations of these seeds for future planting, among other clauses. The Petitioner, Bowman, fulfilled his contractual obligations for seeds purchased from licensed Monsanto distributors. However, he purchased risky commodity seeds from a grain elevator for a second-planting and, upon learning that some of these seeds exhibited the same traits as Monsanto's genetically modified seeds,

saved the future generations of the commodity seeds for future plantings.

It is apparently undisputed that the sales of second-generation seeds to grain elevators did not violate Monsanto's contractual agreement. No contractual privity exists between Monsanto and Bowman with respect to the seeds purchased from the grain elevator and Monsanto therefore turns to its theory that it possesses inexhaustible patent rights over all second, third, and *n*th generation seeds. Monsanto argues that all subsequent generations of self-replicating technologies (seeds, in the present case) are newly infringing items and its patent rights in future generations will therefore *never* be exhausted.

The Federal Circuit agreed with Monsanto's theory, thereby creating a judicial exception to patent exhaustion for self-replicating technology that is not based on this Court's precedent. The lower court's decision asserts that every new generation of seed that develops from the planting of genetically modified seed results in "the grower . . . creat[ing] a newly infringing article." *Monsanto Co. v. Bowman*, 637 F.3d 1341, 1348 (Fed. Cir. 2011). Such a holding results in a patent right that runs forever with future generations and ignores this Court's precedent requiring courts to look at whether a use is "substantially embodied" in the patent.

A judicially created exception for self-replicating technologies from patent exhaustion is an inappropriate solution. Such an exception, creating inexhaustible patent rights, will harm downstream

users who may have no notice that they are using patented technology. This exception may also have unknown consequences for other forms of self-replicating technologies, adding to the transaction costs or inhibiting research and development in other fields that use such technologies, including on organisms, viruses, DNA, or other nanotechnologies.

Rather than create judicial exceptions to patent exhaustion, this Court should rely on its precedent and uphold its longstanding history of applying a strong patent exhaustion doctrine. A patented invention that is sold and used for the purpose it was intended, or "substantially embodied" by the patent, such as the case of self-replicating technology, should exhaust the patent rights of the patent holder. Eliminating the Federal Circuit's judicial exception would create greater clarity and stability for users of patented self-replicating technology.

Applying patent exhaustion to self-replicating technology would not overly-burden the inventor who can still protect his investment through contractual agreements governing post-sale uses, provided that such contracts are not voided for antitrust violations or unconscionable terms. Contract law, by refusing to immunize anticompetitive behavior and providing appropriate safeguards to the public, therefore represents a more appropriate vehicle for enforcing post-sale restrictions on patented technology.

Additionally, while patent owners often assert the need for strong patent protection, lowered patentability criteria or, in this case, an exception to

patent exhaustion in order to induce investment, a plethora of alternative mechanisms to patent regimes exist to reward research and development. *Sui generis* systems of rewards or cash innovation inducement prizes are viable alternatives to the patent system. Such alternatives may represent more appropriate rewards for self-replicating technologies than an inexhaustible patent over all future generations of such technology.

ARGUMENT

I. CREATION OF AN INEXHAUSTIBLE MONOPOLY RIGHT OVER SELF-REPLICATING TECHNOLOGY HARMS THE PUBLIC

Although a patent owner possesses a bundle of rights over its patented technologies, limits on these rights exist. Such limits recognize that the purpose of the patent system is to promote progress and that a patent is not an absolute right. Patent exhaustion is one restriction on patent rights and enjoys a rich history in this Court's precedent. Patent exhaustion has been applied in the United States for over 150 years, and this Court has continually applied and enforced this limitation without creating categorical exceptions.

A. History of This Court's Precedent Supports Strong Patent Exhaustion Principles

The patent exhaustion doctrine provides that once an authorized sale of the patented invention is

made, the patent holder's rights terminate and the user can use, destroy, or sell the technology without seeking the permission of the patent holder. This doctrine protects the public and increases market competition because it limits the patent holder's control to the first authorized sale, thereby guarding against "double dipping." Patent exhaustion promotes downstream, secondary markets for patented technology and creates clarity for downstream users who need not fear being sued for patent infringement after the first authorized sale.

An examination of this Court's precedent reveals a long history of applying strong patent exhaustion principles, limiting the exclusive rights of a patent to the first authorized sale, which goes back over 150 years. In 1853, this Court stated that purchases of patented items could be used "in the ordinary pursuits of life" without permission from the patent owner. *Bloomer v. McQuewan*, 14 How. 539, 549 (1853). Once a lawful sale of a patented technology "passes to the hands of the purchaser, it is no longer within the limits of the monopoly. It passes outside of it, and is no longer under the protection" of patent law. *Id.* Twenty years later, this Court affirmed that "the purchase carrie[s] with it the right to the use of the machine so long as it [is] capable of use." *Adams v. Burke*, 17 Wall. 453, 455 (1873). Once the sale is made, the patent owner "parts with the right to restrict that use." *Id.* at 456. Without this doctrine, the "inconvenience and annoyance to the public [of not applying patent exhaustion] are too obvious to require illustration." *Keeler v. Standard Folding Bed Co.*, 147 U.S. 659, 667 (1895).

This Court has continually applied the doctrine of patent exhaustion, articulating a clear and bright-line rule that post-sale restrictions are not permitted under patent laws once the owner authorizes a sale and thus exhausts his rights. *Quanta Computer Inc. v. LG Electronics, Inc.*, 553 U.S. 617, 631 (2008); *United States v. Univis Lens Co.*, 316 U.S. 241 (1942); *Motion Picture Patents Co. v. Universal Film Mfg.*, 243 U.S. 502, 516 (1917); *Keeler v. Standard Folding Bed Co.*, 147 U.S. 659 (1895). In applying patent exhaustion, this Court has evaluated whether the features of the patented invention "substantially embodies" the use. In *Univis*, to determine whether patent exhaustion applied to the facts of the case, this Court specifically looked to whether the use of the patented invention was "embodied in that particular article." *Univis* at 250-51. This approach was affirmed most recently in this Court's decision in *Quanta Computer, Inc. et. al. v. LG Electronics, Inc.* 533 U.S. 617 (2008).

In *Quanta*, this Court noted concerns that eliminating exhaustion would allow patent holders to control any downstream purchases and concluded that "the traditional bar on patent restrictions following the sale of an item applies when the item sufficiently embodies the patent—even if it does not completely practice the patent—such that its only and intended use is to be finished under the terms of the patent." *Quanta at* 625. Thus, the doctrine of patent exhaustion which "provides that the initial authorized sale of a patented item terminates all patent rights to that item," applies to uses and applications that are "substantially embodied" by the

patent and "prevents the patent holder from invoking patent law to control postsale use of the article." *Id.* at 622, 638.

Continually, this Court has reminded that the patent rights are not designed to "creat[e] the private fortunes for the owners of patents." *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 511 (1916). Instead, patent rights must be carefully balanced and the exhaustion doctrine should be strictly applied in order to benefit society. *See United States v. Masonite Corp.*, 316 U.S. 265 (1942) (finding that patent rights "must be strictly construed so as not to derogate from the general law beyond the necessary requirements of the patent statute"); *Kendall v. Winsor*, 62 U.S. (21 How.) 322, 329 (1858) (noting that "Whilst the remuneration of genius and useful ingenuity is a duty incumbent upon the public, the rights and welfare of the community must be fairly dealt with and effectually guarded.").

In the present case, second, third and *n*th generation progeny are certainly "substantially embodied" in the first generation authorized seed. These future generations of seeds are both literally and figuratively "substantially embodied" in the first generation seed. Certainly, the "only and intended use" of Monsanto's Roundup Ready® seeds are for planting, and the next generation of seeds that result from such plantings must be considered to be substantially embodied in the initial seeds. This court should strictly apply the patent exhaustion doctrine to the facts of the case.

Although Monsanto may argue that the seeds may be used for other purposes, such as for feed, the question before the court is the application of these principles to the *patent* in the seed, and not the seed's natural and non-patented features or values. Certainly, a seed may be used for feed, but the entire value and purpose of Monsanto's patented seed is its resistance to herbicide for purposes of planting. As use in feed, the patent—its herbicide resistant properties—has no value or purpose. In other words, the genetic trait of the seed has no benefit for any purpose other than planting. Thus, the only and intended use of the *patent* contained in the seed is for use in planting and the future generation seeds that result from the planting are substantially embodied within the patent. The Federal Circuit thus erred in creating a judicial exception to the patent exhaustion doctrine for self-replicating technology.

B. A Judicially Created Exception from Patent Exhaustion for Self-Replicating Technology Represents an Inappropriate Solution and Fails to Guard Against Unintended Consequences

A bright-line rule applying patent exhaustion to all forms of technology would provide clarity to purchasers, in particular for downstream users. Instead, the Federal Circuit opinion in the present case results in a judicially created exception for self-replicating technology from the doctrine of patent exhaustion. In essence, the Federal Circuit rule results in an *inexhaustible* right to control self-replicating technology and all subsequent

generations of the technology. *See* Yee Wah Chin, *Licensing: Patent Exhaustion, and Self-Replicating Technologies: A Case Study*, 32 THE LICENSING JOURNAL 7 (2012).

Exhaustion will never apply to seeds or other self-replicating technology if the Federal Circuit decision is permitted to stand. Thus, patent infringement will always be applicable to any use of second (or future) generations of self-replicating technology, creating great difficulties for downstream users.

The problem with creating an exception to patent exhaustion for self-replicating technology, such as the seeds in the present case, is that subsequent generations of the technology are not marked as patented items and downstream users may have no notice or knowledge of any infringement. Farmers who purchase commodity seeds from grain elevators rather than directly from an authorized Monsanto purchaser, for example, have no way of knowing whether those seeds include genetically modified, patented seeds. Similarly, farmers who do not purchase Monsanto's seeds, but purchase non-genetically modified seeds and save those for future plantings may nonetheless find themselves in possession of Roundup Ready® seeds and thus infringing Monsanto's patents—without any way of knowing that such infringement is occurring—due to cross-pollination. Even plants exhibiting the genetically modified trait found in the wild as a result of cross-pollination, would fall under the patent rights of the patent holder since his rights

would forever flow with the subsequent generations and he could prohibit the use or sale of such items.

Unknowing, downstream users may therefore be infringers under the Federal Circuit theory of exceptions for self-replicating technologies which could result in a burdensome requirement that a farmer who purchases seed from grain elevators or saves his non-genetically modified seed for future plantings must have this seed tested before using it. While damages may be not be available without notice to the alleged infringer, injunctions may still be applicable and result in unfair losses to farmers who have no way of determining whether seeds not purchased from Monsanto or its distributors contain the patented genetically modified trait.

Reducing application of the patent exhaustion doctrine for self-replicating technology would serve to eliminate certainty and clarity in the marketplace. *See* Yee Wah Chin, *Inexhaustible: Patents on Self-replicating Technologies*, Vol. 3, No. 5 LANDSLIDE (2011) (*quoting* Thomas G. Hungar, *Observations regarding the Supreme Court's Decision in* Quanta Computer Inc. v. LG Electronics, Inc., 49 IDEA 517, 530-31 (2009)). The reduction of stability and predictability with regard to markets for patented technology would have significant impacts on downstream purchasers and businesses that rely such inventions. Transaction costs would increase as downstream users would be forced to conduct patent searches and seek permission from patent owners in order to use the technology.

The Federal Circuit's *sui generis* exception from patent exhaustion would apply not only in the case of seeds, but also to other forms of self-replicating technology. As the Solicitor General noted in his brief, the outcome of the case applies to other self-replicating technologies including "for man-made cell lines, DNA molecules nanotechnologies, organic computers, and other technologies that involve self-replicating features." United States Amicus Br. On Petition for a Writ of Certiorari to the United States Court of Appeals for the Fed. Cir., 19-20. In recommending against the granting of the petition, the Solicitor General suggested that case law further develop so that due consideration can be given to "unforeseen consequences for other present and future self-replicating technology." *Id.* Certainly, a categorical exclusion of self-replicating technologies from the application of patent exhaustion could have negative impacts on the wide and growing range of self-replicating technologies. Any decision to eviscerate the patent exhaustion doctrine will have consequences that cannot be adequately predicted in the field of rapidly evolving self-replicating technology and it would be imprudent to create categorical exceptions that will have unknown breadth and consequences for all downstream users.

This Court has previously rejected categorical exclusions from the doctrine of patent exhaustion, such as in the case of method claims. *Quanta Computer Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008) ("We therefore reject LGE's argument that method claims, as a category, are never exhaustible."). Categorical exclusions from patent

exhaustion are inappropriate and judicially created exceptions for self-replicating technology should not be granted, particularly given the unknown effects such an exception will have on other industries and the future of self-replicating technologies. This Court should continue to reject such categorical exclusions, recognizing the alternative mechanisms that can be used to protect and induce investments into research and development for self-replicating technology.

II. CONTRACT LAW PROVIDES THE MORE APPROPRIATE MECHANISM TO PROTECT INVESTMENTS IN SELF-REPLICATING TECHNOLOGY WHILE ALSO SAFEGUARDING USER RIGHTS

Rather than prevent usage of second and future generations of self-replicating technology through inexhaustible patent rights, contracts can provide a more appropriate mechanism to restrict usage.[2] A robust patent exhaustion doctrine plays an important role in promoting stability and clarity

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[2] We note, also, that apart from an exception from patent exhaustion or contractual agreements, Monsanto has other potential avenues to prevent the use of future generations of its genetically modified seed. For example if exhaustion applies and contractual provisions are found to violate antitrust laws or contain unconscionable clauses, Monsanto could stack its genetically modified seed with a "terminator" gene that renders subsequent generations of seed sterile. Elizabeth I. Winston, *A Patent Misperception*, 16 LEWIS & CLARK L. REV. 289,335 (2012) (discussing U.S. Patent No. 5,723,765 granted to Delta which includes a genetic code rendering a seed fertile for only one planting while future generations are sterile.).

in the purchase, sale and use of patented technologies, including for use in further research and development. However, a strong patent exhaustion doctrine does not affect the use of contract law, rather than patent law, to enforce post-sale restrictions. Where patent owners are concerned that the initial sale of patented technology does not adequately protect their investments and wish to restrict usage of subsequent generations of self-replicating technology, they are generally free to rely on the use of contracts to limit post-sale uses.

In fact, Monsanto did just that in the present case, restricting farmers that purchased the genetically modified seed directly from authorized distributors from saving seed and planting future generations. Monsanto required farmers to sign a contractual technology agreement "1) to use the seed containing Monsanto gene technologies for planting a commercial crop only in a single season; 2) to not supply any of this seed to any other person or entity for planting; 3) to not save any crop produced from this seed for replanting or supply saved seed to anyone for planting; and 4) to not use this seed or provide it to anyone for crop breeding, research, generation of herbicide registration data or seed production." *Monsanto v. Bowman* at 1344-45 (*citing* Monsanto's Standard Form Technology Agreements, 1998-2007, J.A. 284-315). Monsanto is clearly capable of drafting contractual agreements that limit post-sale usage of its genetically modified seed, such as to restrict usage of future generation seed. Monsanto is therefore not without a cause of action against users who use second and future generation seed if these users violate their contracts.

The reason the question before the Court presents issues of patent exhaustion rather than a question of contract law because Monsanto did not have contractual privity with the petitioner, Bowman, with regard to the seed planted and saved from the purchase of commodity seed from the grain elevator. Had Bowman planted and saved the seed he purchased from the licensed distributor, Bowman would have violated the technology agreement. However, Monsanto acknowledged that a grower can sell its crop to grain elevators without securing any promise not to sell the seeds for planting without violating the contractual agreement. *Monsanto v. Bowman* at 1345 (*quoting* Oral Arg. at 19:34-20:14, *available at* http://www.cafc.uscourts.gov/oral-argument-recordings/all/bowman.html). The sale of second-generation genetically modified seed to the grain elevator was, therefore, a legal sale that did not violate any contractual agreements. Purchasers of the seed from the grain elevator did so without restriction and Monsanto had no contractual agreement over such purchases. Monsanto therefore attempts to rely on a judicially created exception to the patent exhaustion doctrine.

In previous cases applying the patent exhaustion doctrine, this Court recognized that patent owners may seek to enforce post-sale restrictions through contract law even if their patent rights have been exhausted. In *Quanta*, for example, this Court "note[d] that the authorized nature of the sale to Quanta does not necessarily limit LGE's other contract rights. LGE's complaint does not include a breach-of-contract claim, and we express no opinion

on whether contract damages might be available even though exhaustion operates to eliminate patent damages." *Quanta* at n.7 (*citing Keeler v. Standard Folding Bed Co.*, 157 U.S. 659, 666 (1895)). This Court has a long history of applying a robust patent exhaustion doctrine while recognizing that contract law may be used where patent law does not apply in order to enforce post-sale limitations. *Keeler v. Standard Folding Bed Co.*, 147 U.S. 659 (1895) ("Upon the doctrine of these cases, we think it follows that one who buys patented articles of manufacture from one authorized to sell them becomes possessed of an absolute property in such articles, unrestricted in time or place. Whether a patentee may protect himself and his assignees by special contracts brought home to the purchasers is not a question before us and upon which we express no opinion. It is, however, obvious that such a question would arise as a question of contract, and not as one under the inherent meaning and effect of the patent laws.").

Reliance on contract law, rather than reducing the patent exhaustion doctrine, is a better solution with regard to enforcing post-sale limitations because it can permit the inventor of self-replicating technology to implement such restrictions while still protecting the public and users of such technologies. While under patent law, inventors may be immunized from scrutiny for anti-competitive behavior or violations of antitrust law, contract law provides protection for users. *See* Mark R. Patterson, *Contractual Expansion of the Scope of Patent Infringement Through Field-of-Use Licensing*, 49 WM. & MARY L. REV. 157, 169-71 (2007). For example, contracts may be reviewed for antitrust

violations and can also be voided where the terms are unconscionable or otherwise against public policy. Contract law therefore provides a better alternative to restricting use of future generations of self-replicating technology than patent exhaustion because it can protect the interest of the inventor while simultaneously safeguarding users.

III. NON-PATENT MECHANISMS CAN AND SHOULD ENCOURAGE PROGRESS WHERE PATENTS ARE AN INAPPROPRIATE, UNNECESSARY, INSUFFICIENT, OR BURDENSOME REWARD

Alternative mechanisms outside of the patent system can, and should, encourage progress where patents are an inappropriate, unnecessary or burdensome reward. As noted above, in the case of self-replicating technology, patents may be an inappropriate reward because of problems in providing notice to the user in cases of second (or later) generations of the technology, hampering further research and development, and eliminating the availability of competition through secondary markets. Although in the present case contract law may provide a more appropriate solution with respect to self-replicating technology, some patent holders will still advocate for the inexhaustible right to own all future generations of the technology claiming the need to induce research and development in this area.

Proponents of liberal standards on patentability assert that patents are necessary to induce, protect

and reward investments in new technology. However, patents as incentives have known deficiencies and a wide range of non-patent mechanisms to stimulate research and development exist. It is therefore clear that patents are not the only method for inducing investment into the creation of new technology and great flexibility exists to design these alternative forms of incentive[3] and we urge this Court to keep in mind that if additional research and development in the area of self-replicating technology is, in fact, necessary such alternatives can be implemented to address shortcomings.

For example, trade secret protection, which is not without its own shortcomings in terms of limiting access to knowledge, can be used to promote investments in new medical products such as diagnostic or biotechnology drugs. Iraj Daizadeh, et. al., *A General Approach for Determining When to Patent, Publish, or Protect Information as a Trade Secret,* 20 NAT. BIOTECH at 1053-54 (2002).

In addition to trade secret protection, a wide range of new *sui generis* forms of intellectual property are used in parallel to the patent system, often when patent protection is unavailable. One type of common *sui generis* protection is the

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[3] Although several alternative incentive mechanisms are discussed herein, KEI does not necessarily endorse these alternatives, particularly with respect to the manner in which they have been implemented. The discussion of alternatives mechanisms discussed in this brief serve solely as examples of the range of incentives that currently exist outside the patent system, or those that have been proposed.

application of a limited time exclusive right to rely on test data used to register new drugs or vaccines. Food, Drug and Cosmetics Act, New Drugs, 21 U.S.C. §355. These rights include five years of test data protection for new chemical entity pharmaceutical products, and twelve years of test data protection for new biologic drugs. *Id.* More relevant to the present case, under the Federal insecticide, Fungicide, and Rodenticide Act (FIFRA), a *sui generis* regime for test data for agricultural products exists, granting an initial period of ten years of exclusive rights followed by four year of remuneration rights for the right to rely upon data used to establish the safety and efficacy of covered agricultural products. Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), Registration of Pesticides, 7 U.S.C. §136a.

Like trade secrets, exclusive rights over test data have their own shortcomings, including ethical concerns, such as redundant testing of humans and animals for product safety, but presently serve as a mechanism to promote investments in clinical test data. These mechanisms include cases in the United States and Europe where the monopoly can be set aside and replaced with a system of remuneration to the originators of the data.

Another existing non-patent right is the marketing exclusivity granted for development of new "orphan" drug indications and receipt of a fifty-percent tax credit for companies investing in the clinical trials. Internal Revenue Code, Clinical testing expenses for certain drugs for rare diseases or conditions, 26 U.S.C. §45C. The recently passed Generating Antibiotic Incentives Now (GAIN) Act

similarly seeks to encourage research on antibiotic resistance by granting an additional five years of market exclusivity. S.3187, Generating Antibiotic Incentives Now, Food & Drug Administration Safety and Innovation Act, 112th Cong., 2d Sess. (2012).

Congress has also created a "Priority Review Voucher" to stimulate research and development in treatments for rare tropical diseases. This voucher provides for a transferable right to an accelerated consideration of new drug approvals as a reward for registering drugs for rare diseases such as cholera or leprosy. Food, Drug and Cosmetic Act, Priority Review to Encourage Treatments for Tropical Diseases, 21 U.S.C. §360n.

In addition to these existing mechanisms, a class to reward investments in research and development, involving a system of cash prizes, is currently under consideration, both domestically and internationally. Cash innovation inducement prizes can stimulate investments in public health as well as other areas of public and private interest. *See, e.g.*, L. Brunt, et. al., INDUCEMENT PRIZES AND INNOVATION (2008); Bruce G. Charlton, *Mega-Prizes in Medicine: Big Cash Awards May Stimulate Useful and Rapid Therapeutic Innovation*, 68 MEDICAL HYPOTHESES 1-3 (2007); K. Davidian, PRIZES, PRIZE CULTURE AND NASA'S CENTENNIAL CHALLENGES (2004); T. Kalil, *Hamilton Project and Brookings Intuition, Prizes for Technological Innovation* (2006); James Love & Tim Hubbard, *The Big Idea: Prizes to Stimulate R&D for New Medicines*, 82 CHI.-KENT L. REV. 1519, 1521-24 (2007); James Love & Tim Hubbard, *Prizes for Innovation of New Medicines and*

Vaccines, 18 ANNALS HEALTH L. 155 (2009); James Love, *The role of Prizes in Developing Low-Cost, Point of Care Rapid Diagnostic Tests and Better Drugs for Tuberculosis*, KNOWLEDGE ECOLOGY INTERNATIONAL (2008), *available at* http://www.keionline.org/misc-docs/Prizes/prize_tb_msf_expert_meeting.pdf; Ron Marchant, *Managing Prize Systems*, 2 KNOWLEDGE ECOLOGY STUDIES (2008); W. A. Masters, *Prizes for Innovation in African Agriculture* (2004), *available at* http://www.eart.columbia.edu/cgsd/prizes; J. G. Morgan, *Inducing Innovation Through Prizes*, 3 INNOVATIONS: TECHNOLOGY, GOVERNANCE, GLOBALIZATION 105 (2008); Julien Penin, *Patents Versus Ex Post Rewards*, 34 RESEARCH POL'Y 641 (2005); Joseph E. Stiglitz, *Scrooge and Intellectual Property Rights: A Medical Prize Fund Could Improve the Financing of Drug Innovations*, 333 BRITISH MEDICAL JOURNAL 129 (2006); Burton Weisbrod, *Solving the Drug Dilemma*, WASH. POST at A21 (Aug. 22, 2003); Brian D. Wright, *The Economics of Invention Incentives: Patents, Prizes and Research Contracts*, 73 AM. ECON. REV. 691 (1983).

Domestically, for example, Senator Sanders (I-VT) has proposed the use of prize funds as an alternative reward mechanism for pharmaceutical drugs, rather than the exclusive right to a patent monopoly. In the 112th Congress, Senator Sanders introduced two bills proposing large cash prizes. The first bill, S.1137, would apply to all prescription drugs. Medical Innovation Prize Fund Act, S.1137, 112th Cong. (2011). The second bill, S.1138, would limit application to HIV/AIDS drugs. Prize Fund for HIV/AIDS Act, S.1138, 112th Cong. (2011).

On May 15, 2012, the U.S. Senate Committee on Health, Education, Labor and Pensions (HELP) held a hearing on S.1138. Nobel Prize winner, Joseph Stiglitz, noted in testimony at the hearing that the patent system may "have adverse effects on innovation, because the most important input into any research is prior ideas . . . there is a simple way to 'square the circle,' which entails de-linking research and development incentives from drug price . . . It does this through a simple mechanism—prizes." Joseph E. Stiglitz, Testimony to the U.S. Senate HELP Committee, Subcommittee on Primary Health and Aging, Hearing on the High Cost of High Prices for HIV/AIDS Drugs and the Prize Fund Alternative, *available at* http://www.help.senate.gov/imo/media/doc/Stiglitz.pdf.

Internationally, the concept of prizes has been introduced to address de-linkage of the costs of research and developments and the price of health products for particular conditions, or to address diseases disproportionately affecting developing countries. Global strategy and plan of action on public health, innovation and intellectual property. World Health Assembly 61.21 (2008). Such de-linkage includes the awards of prizes. *Id.* at Annex, element 5.3(a). An independent group of experts again endorsed this concept in an April 2012 report. World Health Organization, *Report of the Consultative Expert Working Group on Research and Development: Financing and Coordination: R&D to Meet Health Needs in Developing Countries: Strengthening Global Financing and Coordination*,

http://www.who.int/phi/CEWG_Report_5_April_2012.pdf.

Prizes may be particularly relevant where products are not patent eligible or where it would be inefficient or harmful to permit enforcement of exclusive rights. Where unrestricted access to basic information or discoveries is critical to progress, patents act as a barrier and do more harm than good. *See* John Sulston, et. al., THE COMMON THREAD (2003); Aaron S. Kesselhein, et. al., *University Based Science and Biotechnology Products: Defining the Boundaries of Intellectual Property*, 293 JAMA 850 (2005).

Although the above examples highlight current efforts to enact prize systems for pharmaceutical development, the use of cash innovation inducement prizes is not new. In fact, and particularly applicable to the facts of the present case, the agricultural and food industry has a long history of using such incentive mechanisms successfully.

As far back as the 1700s, prizes have been used in a variety of countries to reward specific advances in agriculture. Knowledge Ecology International, *Selected Innovation Prizes and Reward Programs*, 1 KEI RESEARCH NOTE 1, 5-9 (2008). For example, to address the famine of 1769 in France, a prize was announced to reward a vegetable that could be used during a famine; the prize was awarded in 1773 for the discovery of the nutritional value of the potato in France. *Id.* at 6. Similarly, in 1747, after a Berlin professor found a way to extract sugar from a beet, the Dutch Society for the Encouragement of

Agriculture offered a prize to stimulate research into extraction of sugar from native plants. *Id.* at 7. In 1826, the Royal Horticultural Society of Paris offered a prize to improve the fruits from apple and pear trees with the prize to be awarded in 1847. *Id.* at 8. In 1852, the Royal Agricultural Society of England created a prize for manure that had fertilizing capabilities equal to Peruvian Guano, provided that it was available in unlimited supply to English farmers at a low price. *Id.* at 8. These are just a few examples of historical uses of prizes in the field of agriculture. Many other exists, both in terms of agriculture and food, as well as a wide range of other areas including automotive, animal control, aviation and space, climate, environment, energy, power, design and architecture, governance and social innovation, mathematics, medical, mining, nanotechnology and robotics, sea and inland navigation, software, computer and information technology, and textile machines, among others.

In the present case, alternative reward systems, such as prizes, may provide a more appropriate incentive mechanism to induce research and development on self-replicating technology rather than granting inexhaustible rights to all future generations or self-replications. Should Congress find such incentives necessary due to exhaustion of patent rights in future generations, it can create such prize funds or other *sui generis* protections.

Congress has clearly shown that it is capable of remedying market failures or promoting alternative reward mechanisms to the patent system and, therefore, this Court should not create judicial

exceptions to its longstanding doctrine of patent exhaustion out of fear that research and development of self-replicating will be impeded if it continues to apply robust exhaustion principles. In fact, failure to apply patent exhaustion to self-replicating technology may increase transaction costs and impede research in areas that rely on such technologies. Inexhaustible patent rights on self-replicating technology are burdensome and can create uncertainties for market and unknown consequences, particularly in light of rapidly evolving technologies. A strong patent exhaustion doctrine can remedy such burdens and alternative mechanisms, such as those discussed *supra*, to inexhaustible monopoly rights may be more viable and appropriate solutions.

CONCLUSION

For the reasons stated above, this Court should reverse the opinion of the Federal Circuit.

Respectfully submitted,

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AMICUS CURIAE BRIEF

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VERNON HUGH BOWMAN,

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—v.—

MONSANTO COMPANY, ET AL.,

Respondents.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF FOR THE NEW YORK INTELLECTUAL PROPERTY LAW ASSOCIATION AS *AMICUS CURIAE* IN SUPPORT OF RESPONDENTS

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INTEREST OF AMICUS CURIAE

The New York Intellectual Property Law Association (the "NYIPLA" or "Association") respectfully submits this brief *amicus curiae* in support of Respondents Monsanto Company, *et al.* (separately and collectively "Monsanto").[1]

The arguments set forth in this brief *amicus curiae* were approved on January 17, 2013 by an absolute majority of the officers and members of the Board of Directors of the NYIPLA, including any officers or directors who did not vote for any reason, including recusal, but do not necessarily reflect the views of a majority of the members of the Association, or of the law or corporate firms with which those members are associated. After reasonable investigation, the NYIPLA believes that no officer or director or member of the Amicus Briefs Committee who voted in favor of filing this brief, nor any attorney associated with any such officer, director or committee member in any law or corporate firm, represents a party in this litigation. Some officers, directors, committee members or associated attorneys may represent entities, including other *amici curiae*, which have an interest in other matters which may be affected by the outcome of this litigation.

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[1] The parties have consented to the filing of this brief. Pursuant to Sup. Ct. R. 37.6, the NYIPLA and its counsel represent that they have authored the entirety of this brief, and that no person or entity other than the Association or its counsel has made a monetary contribution to the preparation or submission of this brief.

The NYIPLA believes that this Court should affirm the judgment of the Court of Appeals for the Federal Circuit. The Association's three principal purposes for filing this brief amicus curiae are to ensure:

1. That the legal and economic objectives of Congress in enacting the contributory infringement statute in 1952, among which were the authorization of both non-staple tying and downstream recoveries of royalties or patent infringement damages from purchasers of non-staple components of patented products, are neither completely vitiated nor substantially undermined by unwarranted expansion of the common law equitable defense of exhaustion beyond the narrow holding of *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008) ("*Quanta*");

2. That the enormous economic efficiencies generated by the widespread employment of field-of-use restrictions in manufacturing and use licenses, as authoritatively endorsed by this Court in *General Talking Pictures Co. v. Western Electric Co.*, 304 U.S. 175, *modified on reh'g*, 305 U.S. 124 (1938) ("*GTP I*" and "*GTP II*"), are not unnecessarily restricted by extension of the narrow holding of *Quanta*. In particular to ensure that *Quanta* is not extended beyond its narrow contributory infringement application to

field-of-use restrictions such as the "second generation" seed replanting limitations in the label licenses when such applications were implicitly endorsed by this Court in *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc.*, 534 U.S. 124 (2001) ("*J.E.M.*").

3. That the reasonable expectations of the biotechnology sector are not frustrated by any unwarranted alteration of the long-accepted view that the production of successive generations of biological materials, including "genetically modified" ("GM") biological materials,[2] represent separate successive "makings" for purposes of the infringement analysis under 35 U.S.C. § 271(a).

The NYIPLA is a professional association of more than 1,300 attorneys whose interests and practices lie in the area of patent, trademark, trade secret and other intellectual property ("IP") law. The Association is one of the largest regional IP bar associations in the United States. Members of the NYIPLA include in-house counsel serving businesses and other organizations that deal with IP rights in all technologies and disciplines, as well as attorneys in private practice who represent IP owners and their adversaries (most of which are also IP owners). The entities served by the Association's members

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[2] Occasionally these same materials may be referred to in literature as "genetically engineered" ("GE") and as "genetically modified organisms ("GMO").

include inventors, venture capitalists, entrepreneurs, businesses, universities and industry and trade associations.

A substantial percentage of NYIPLA members participate actively in patent litigation. Patent litigators must keep continuously apprised of the effect of the antitrust, misuse, exhaustion and other equitable defenses upon the unenforceability or noninfringement of patents under all controlling precedents of this Court as interpreted by the federal appellate courts. Since its founding in 1922, the NYIPLA has been committed to maintaining the integrity of United States patent law and to the proper application of that law. Nowhere is the considered and rational application of patent law principles more important to the economy of the United States than at the interface between those principles and the principles of economic fairness embodied in the antitrust laws as well as in the misuse and other defenses which derive from the same equitable common law roots.

One area of this critical interface in which counseling vigilance has proved particularly important involves the contrast between the "field of use" restrictions, which were universally upheld by this Court at common law, and the "tying" of staple goods, which has been universally proscribed for over 95 years under *Motion Picture Patents Co. v. Universal Film Manufacturing Co.*, 243 U.S. 502 (1917) ("*Motion Picture Patents*" or "*MPP*"). At the very cusp of this critical juncture lies the principle of contributory infringement, which is sometimes characterized as "nonstaple tying." The history and principles underlying contributory infringement are important to placing the *Quanta* decision in its

proper perspective. Although this Court had endorsed the doctrine of contributory infringement in *Leeds & Catlin* in 1909,[3] it reversed course in 1944 by proscribing nonstaple tying as patent misuse and a Sherman Act violation in the *Mercoid* cases.[4] As this Court explained in *Dawson Chemical Co. v. Rohm & Haas Co.*, 448 U.S. 176 (1980) ("*Dawson*"), the *Mercoid* cases, in turn, were overruled by Congress when it enacted Sections 271(c) and 271(d)(1) through (3) as part the new codified patent law in 1952, 35 U.S.C. §§ 271(c) and 271(d)(1) through (3).

The Association has maintained a particularly strong interest in this area for many years and, as this Court recognized in *Dawson*,[5] actually drafted the sections of the patent law designed to overrule the *Mercoid* cases under the direction of Hon. Giles Sutherland Rich, its 28th President (1951-52). Judge Rich also was instrumental in the enactment of, and the preparation of a commentary on, the Patent Act of 1952 as embodied in Title 35 of the United States Code (hereinafter referred to in its current form as the "Patent Act").[6]

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[3] *Leeds & Catlin Co. v. Victor Talking Mach. Co.*, 213 U.S. 325 (1909) ("Leeds & Catlin").

[4] *Mercoid Corp. v. Mid-Continent Inv. Co.*, 320 U.S. 661 (1944) ("Mercoid I") and *Mercoid Corp. v. Minneapolis-Honeywell Regulator Co.*, 320 U.S. 680 (1944) ("Mercoid II").

[5] *Dawson*, 448 U.S. at 204-05.

[6] At the time of the drafting and testimony referred to in *Dawson*, The Association was known as the New York Patent Law Association ("NYPLA").

SUMMARY OF THE ARGUMENT

Petitioner Vernon Hugh Bowman ("Bowman") is an Indiana farmer who grows corn, wheat and soybeans. Pet. App. 21a. Beginning in 1999, Bowman began purchasing Monsanto's patented GM Roundup Ready® soybean seeds ("RR seeds") from Monsanto's licensee, Pioneer Hi-Bred ("Pioneer"). Pet. App. 8a-9a. As a requirement of the purchase, Bowman, just like every other purchaser of RR seed from Monsanto or from licensed producers, signed a Technology Agreement ("TA"). Pet. App. 6a, 8a-9a; J.A. 27a. That TA was a "single use" license that explicitly bound the grower (a) not to replant any of the crop grown from the purchased seeds and (b) not to sell any of that crop for replanting. Pet. App. 7a; J.A. 27a.

Beginning also in 1999, Bowman purchased commodity soybean from a local grain elevator to use as seed for a late-season planting. Pet. App. 9a. Upon testing the fields planted with the commodity soybeans, Bowman determined that the majority of the seeds were resistant to glyphosate. Pet App. 9a. Bowman knew that no license for replanting second generation seed had been conveyed either to him or to any other TA licensee and, accordingly, that the local grain elevators had never been licensed to sell second generation seed for replanting.[7] *See* Pet. App. 7a. Bowman's planting of glyphosate resistant commodity seeds infringed Monsanto's patents. Pet. App. 10a, 17a-18a.

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[7] Bowman understood that it would have been illegal for the grain elevator to sell him RR seeds for replanting. JA83a.

First, Bowman relies on *Quanta* as a defense to Monsanto's claim of patent infringement. But as discussed in Point I, *Quanta* does not apply here because this case does not implicate principles of contributory infringement and has nothing to do with the legal framework at issue in *Quanta*. It does not involve the sale of non-staple goods, which is the prerequisite for contributory infringement under both the common law and the Patent Act. Accordingly, this case does not implicate concerns over "tying" under which infringement suits against contributory infringers were proscribed in the *Mercoid* cases. The second generation RR seed, which Bowman both sold and purchased at his local grain elevator, does not satisfy either the definition of "nonstaple" set forth in Sections 271(c) and 271(f)(2) of the Patent Act or the common law definition formulated by this Court in *Quanta* wherein the article sold must "sufficiently embod[y] the patent . . . such that its only and intended use is to be finished under the terms of the patent."[8]

Second, as discussed in Point II, this case is governed by the standard applied in *GTP II*, which determined that field-of-use restrictions in manufacturing and use licenses are enforceable. Indeed, the type of field-of-use restriction contained in the TA Bowman executed has been before this Court several times and has been upheld under common law equitable principles, misuse, and under the antitrust laws. *See Cotton-Tie Co. v. Simmons*, 106 U.S. 89 (1882) ("*Cotton-Tie*"); *J.E.M.*, 534 U.S. at 128. Moreover, a similar "single use" limitation was explicitly upheld by the Court of Appeals for the

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[8] 553 U.S. at 628.

Federal Circuit in *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700 (Fed. Cir. 1992) ("*Mallinckrodt*"). The opinion of the unanimous Court in *Quanta* did not overrule or even question the Federal Circuit's decision in *Mallinckrodt*.

Third, as discussed in Point III, the RR seed purchased by Bowman from the grain elevator to plant his second crop was never sold by Monsanto or Pioneer and, accordingly, Monsanto's rights as to that seed were never subject to the exhaustion doctrine. Moreover, the use of "make" and "making" as well as "use" and "using" in 35 U.S.C. §§ 112, 154(a)(1) and 271(a) demonstrates that, in the case of replicable biological materials, such as RR seeds, a new "making" of a thing which did not exist before necessarily results as each new generation is created. The biotechnology sector has relied on this plain language and Supreme Court case law (and the PTO Rules) to form a reasonable expectation that subsequent generations of replicable biological material will remain subject to patent protection and has invested heavily in research and development based on that expectation. Acceptance by this Court of petitioner's arguments would represent a revolutionary change in patent law and thwart the biotechnology sector's expectations.

ARGUMENT

Point I.

The Exhaustion Doctrine Should Not Be Expanded Beyond *Quanta*

Bowman relies heavily on *Quanta* and seeks to expand its holding to the facts of this case. The issue

in *Quanta* involved the formalities of reasonable notice required to foreclose application of the common law doctrine of exhaustion to the sale of non-staple components of claimed systems and methods. It relied heavily on principles drawn from this Court's common law contributory infringement jurisprudence. Bowman's effort to extend *Quanta* conflicts with Congressional intent in altering and codifying this Court's contributory infringement law in 1952. The development of the law of contributory infringement and the relationship between contributory infringement and the exhaustion doctrine is vital to a proper understanding of *Quanta*'s holding and why it does not apply here.

A. Background On Conditional Sales & Contributory Infringement

As this Court stated in *Dawson*,[9] the "doctrines of contributory infringement and patent misuse have long and interrelated histories," going "back at least as far as" *Motion Picture Patents*. The two principles had developed at common law, along with the inextricably intertwined "first sale" or "exhaustion" doctrine.

1. The Common Law First Sale Or Exhaustion Doctrine

The common law first sale or exhaustion doctrine represents merely an adjunct to other equitable defenses – a tool for determining what is and what is not within the legitimate scope of the patent holder's

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[9] *Dawson*, 448 U.S. at 179-80.

right to exclude. The determination that the patentee's right to exclude has been exhausted by an authorized and unconditional sale or license represents nothing more than a necessary predicate for (1) establishing a defense of noninfringement arising from such a sale or license; (2) establishing the equitable defense of patent misuse or "extension" of the patent right; or (3) establishing defenses or affirmative claims arising from violations of the antitrust laws, such as price fixing or the patent leveraged tying of staple goods.

To establish the defense of noninfringement under an exhaustion or first sale doctrine, the infringement defendant must establish that the sale to it was both authorized and unconditional. *Bloomer v. McQewan*, 55 U.S. 539 (1852) ("*McQewan*"); *Bloomer v. Millinger*, 68 U.S. (1 Wall.) 340, 351 (1864) ("*Millinger*"); *Adams v. Burke*, 84 U.S. (17 Wall.) 453 (1873); *Keeler v. Standard Folding Bed Co.*, 157 U.S. 659, 666 (1895) ("*Keeler*"); *Bauer & Cie v. O'Donnell*, 229 U.S. 1, 12 (1913) ("*Bauer & Cie*"); and *Motion Picture Patents*.

2. "Conditional" Sales & Licenses At Common Law & Under The Sherman Act

In *Mitchell v. Hawley*, 83 U.S. 544 (1872), this Court upheld and enforced a temporal limitation on use set forth in a "license" contract governing the sale of a number of hat felting machines. By establishing that contractual limitations on the use of a patent were valid and enforceable, this holding essentially limited the rule set forth initially in *McQewan* and *Millinger* to authorized but "unconditional" sales.

In *Adams v. Burke*, 84 U.S. at 456-57 and n.2, this Court was careful to note that the exhaustion of patent rights was limited to situations where the putative use restriction was "implied" rather than explicit. Similarly, in *Keeler*, 157 U.S. at 661, a territorial assignee of patent rights in Boston had attempted to preclude resales in its assigned territory by a purchaser who had bought some of the patented folding beds in an authorized and unconditional sale made outside of the assigned territory. Although the resales in Boston were held noninfringing, the Court was careful to point out that the result would have been different if the purchaser had been "restrained by contract with the patentee."

After the Sherman Act was enacted in 1890, this Court extended the rule of *Mitchell v. Hawley* beyond purchase agreements to licenses and held that:

> [T]he rule is, with few exceptions, that ***any conditions which are not in their very nature illegal*** with regard to this kind of property, imposed by the patentee and agreed to by the licensee for the right to manufacture or use or sell the [patented] article, ***will be upheld by the courts***. *Bement & Sons v. National Harrow Co.*, 186 U.S. 70, 91 (1902) ("*Bement*") (emphasis supplied).

3. Contributory Infringement At Common Law & Under The Sherman Act

In *Dawson*, the Court cited *Wallace v. Holmes* as a "classic example" of contributory infringement drawn

from an "era of simpler and less subtle technology."[10] *Wallace v. Holmes*, 29 F. Cas. 74 (C.C. Conn. 1871) (Case No. 17,100), involved sales of an oil lamp burner assembly which was not itself patented, but which was nonstaple in the sense that it had been designed for operation only as a component of the patented lamp and was not suitable for any substantial noninfringing use. Purchasers of the burner assembly "would be certain to complete the combination, and hence the infringement, by adding the glass chimney."[11]

The contributory infringement principle subsequently was applied to the sale of nonstaple trolley car electrical connectors by the Court of Appeals for the Sixth Circuit in *Thomson-Houston Electric Co. v. Ohio Brass Co.*, 80 F. 721 (6th Cir. 1896). It later was adopted by this Court in *Leeds & Catlin*, where it was applied to uphold an injunction prohibiting contributory infringement against suppliers of the discs employed in the patented phonograph disc and stylus system.[12]

In *Morgan Envelope Co. v. Albany Paper Co.*, 152 U.S. 425, 433 (1894), however, the Court refused to apply the concept of contributory infringement to staple or "perishable" articles "which it is the object of the [patented] mechanism to deliver."[13]

In *Henry v. A.B. Dick Co.*, 224 U.S. 1 (1912) ("*A.B. Dick*"), the Court reached the opposite result. *A.B.*

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[10] 448 U.S. at 188.

[11] *Dawson*, 448 U.S. at 188, *citing* 29 F. Cas. at 80.

[12] *See Dawson*, 448 U.S. at 190.

[13] *Morgan*, 152 U.S. at 433.

Dick was a suit for contributory infringement against a supplier of staple ink in which the Court sustained a label license tying restriction requiring the purchase of ink and other supplies from the manufacturer of a patented mimeograph machine. In an apparent effort to maximize market penetration of the patented machine, "the patentee sold its machines at cost, or less, and depended upon the profit realized from the sale of other non-patented articles adapted to be used with the machine."[14] The Court held that:

> When the purchaser is sued for infringement . . . he may defend by pleading, not the general and unlimited license which is carried by an unconditional sale, but the limited license indicated by the metal tablet annexed to the machine. If the use is not one permitted, it is plainly an infringing use.[15]

For Justice Blackmun in *Dawson*, *Motion Picture Patents* ("*MPP*") represented the "inevitable judicial reaction" to *A.B Dick*.[16] It also represented, in the eyes of the *Dawson* majority, the origins of the common law equitable defense of patent misuse. *MPP* involved a patented film feeder used in motion

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[14] *A.B. Dick*, 224 U.S. at 26.

[15] *Id.* The Court went on to find that "the purchaser must have notice that he buys with only a qualified right of use. He has a right to assume, in the absence of knowledge, that the seller passes an unconditional title to the machine with no limitations upon the use. *Id.*

[16] *Dawson*, 448 U.S. at 191.

picture projectors which were sold with a label license purporting to limit use of the projectors to running a particular type of film. The Court ruled that the owner of a patent may not:

> by notice attached to its machine, . . . in effect, extend the scope of its patent monopoly by restricting the use of it to materials necessary in its operation but which are not part of the patented invention . . .[17]

While *Quanta* notes that *MPP* "explicitly overruled *A.B. Dick*" (which had sanctioned a contributory infringement suit against a supplier of a staple commodity),[18] it did not overrule *Leeds & Catlin* (which had sanctioned a suit for contributory infringement against a supplier of a nonstaple component of a patented combination). Indeed, the holding of *Leeds & Catlin* remained an important element of the common law of patent infringement until it was finally overruled in *Mercoid I*.

4. The *Mercoid* Cases

The two *Mercoid* cases involved holdings of common law patent misuse and antitrust violation predicated upon virtually identical fact patterns. In *Mercoid I*, the patent owned by Mid-Continent and licensed to Honeywell claimed furnace systems which employed a nonstaple combustion stoker switch or holdfire control component. Mercoid attempted to compete with Honeywell in the sale of

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[17] *MPP*, 243 U.S. at 516.

[18] *Id.* at 518.

the nonstaple stoker switches. After its request for a sublicense was refused, Mercoid was sued for contributory infringement and interposed both a misuse defense and an antitrust counterclaim.

The district court ruled that the suit for contributory infringement was barred by the misuse doctrine, but disallowed antitrust damages. The Court of Appeals reversed, citing *Leeds & Catlin*. The Supreme Court reinstated the misuse defense, finding that the same treatment should be accorded to staple and nonstaple materials for the purpose of asserting the defense of misuse against charges of contributory infringement:

> It is true that those [staple tying] cases involved the use of the patent for a machine or process to secure a partial monopoly in supplies consumed in its operation . . . But we can see no difference in principle where the unpatented material or device is itself an integral part of the structure embodying the patent . . . the limits of the patent are narrowly and strictly confined to the precise terms of the grant.[19]

The Court recognized that the *Leeds & Catlin* decision could not be harmonized with the result reached in *Mercoid I* and necessarily should be

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[19] *Mercoid I*, 320 U.S. at 665, citing *Ethyl Gasoline Corp. v. United States*, 309 U.S. 436 (1940) ("Ethyl"), and *United States v. Univis Lens Co.*, 316 U.S. 241 (1942) ("Univis").

overruled – some 27 years after the rule of *A.B. Dick* likewise had been overruled in *MPP*.[20]

Mercoid II differed only in the patented combination and "did not add much to the breathtaking sweep of its companion decision."[21]

5. The 1952 Congressional Enactment

In response to the *Mercoid* cases and as part of the 1952 Patent Act, Congress enacted Section 271(c) to codify the remedy of contributory infringement in connection with the sale of nonstaple goods, and Section 271(d)(1)-(3) to overrule the *Mercoid* cases:

> No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following:
>
> (1) derived revenue from acts which if performed by another without his consent would constitute contributory infringement of the patent;
>
> (2) licensed or authorized another to perform acts which if performed without his consent would constitute contributory infringement of the patent;

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[20] *Id.* at 668.

[21] *Dawson*, 448 at 197.

> (3) sought to enforce his patent rights against infringement or contributory infringement[.][22]

As *Dawson* discusses at some length, the legislative history of the 1952 Patent Act makes clear that those sections were intended to implement a legislative compromise and overrule the two *Mercoid* cases, based upon the distinction between staple and nonstaple components. The enactment of Sections 271(c) and 271(d)(1)-(3) represented a Congressional determination that the sale of nonstaple article can be an act of patent infringement and that a patent holder may engage in certain defined conduct regarding nonstaple components.

This enactment also implicates the exhaustion doctrine. In *Dawson*, the infringement defendant had argued that the phrase "otherwise entitled to relief" in the preamble of Section 271(d) should be interpreted to preclude relief on the theory that the patent holder had "tied the sale of patent rights to the purchase of" the nonstaple product sold by the patentee.[23] The Court squarely rejected this argument because the activities of the patentee were all "given express statutory sanction" by the terms of Section 271(d). If the exhaustion doctrine could be invoked to bar a patentee from conduct explicitly authorized by the statute, the purpose of Congress in enacting the statute likewise would be completely frustrated. Since under Section 271(d) the patent holder is permitted to choose any "one or more" of the three numbered options, Congress clearly authorized

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[22] 35 U.S.C. § 271(d)

[23] *Dawson*, 448 U.S. at 187.

the recovery of royalties at multiple levels in the manufacturing chain and left the patent holder free to determine how best to allocate the costs of the productivity improvements claimed in its patents.

6. The Narrow Holding Of *Quanta*

Quanta was a case about the formalities of reasonable notice which must be satisfied in order to foreclose application of the common law doctrine of exhaustion to sales of non-staple components of claimed systems and methods. Under the facts of that case, the narrow holding of *Quanta* was that neither the provisions of a license from LG Electronics ("LGE") to Intel authorizing the manufacture and sale of specialized microprocessor and chipset components, nor a separate "Master Agreement" requiring Intel to provide notices to purchasers that the patent owner had purported to reserve the right to sue direct infringers, were sufficient to prevent a finding that the patent owner's rights to recover infringement damages had been exhausted upon sale as against the downstream purchaser who bought components from Intel and assembled the patented system.

In *Quanta*, as a "patent owner" under Section 271(d), LGE both "derived revenue" from and "licensed" Intel as it was entitled to do under subparagraphs (1) and (2), and "sought to enforce" its "patent rights against infringement" by Quanta as it was entitled to do under subparagraph (3). Arguably, if the notice requirement in the Master Agreement had been set forth in the manufacturing license from LGE to Intel, this Court might well have found that the exhaustion doctrine could not be

invoked to bar the suit for direct infringement against Quanta.

B. *Quanta* Should Not Be Expanded Beyond Its Facts

This Court should reject Bowman's invitation to extend the ruling of *Quanta* well beyond its present limits. As discussed above, what the patent owner attempted to do in *Quanta* was explicitly authorized by the 1952 codification of the Patent Act. Accordingly, the determination by this Court that a remedial statutory right could be lost by failure to adequately preclude application of a common law doctrine of which Congress was fully aware could only be justified by a determination that the notice to the downstream purchaser was somehow defective. That claim cannot be made here, and to impose any additional formal restrictions which further impede a patentee's right to sue for infringement would represent an unwarranted intrusion upon the Congressional prerogative under Article I of the Constitution.

Moreover, there are significant differences between the product sold in *Quanta* and the RR seeds in this case. In *Quanta*, the chipsets were nonstaple goods capable of only one use – a use that would practice LGE's patents. As a result of their limited use, if the patents were not exhausted and LGE could still assert them, then the chipsets would be useless to the purchaser without a use license

from LGE because it could not use them for any meaningful use.[24]

However, in this case, the second or subsequent generation RR seeds are staple or commodity goods capable for multiple uses in addition to replanting. Many of those uses – such as animal and human food products, biodiesel production and industrial oil applications[25] – do not involve the creation of new infringing RR seeds. Because of the multiple uses, even if a farmer cannot use the progeny RR seeds for planting, the seeds still retain value in the other uses. Because of those other uses that do not involve making new patented RR seeds, there is no reason to find the patent rights associated with "making" to be exhausted.

C. Monsanto's Licenses Comply With Both *Quanta* And The Dual-Licensing Model Of *Yarn Processing*

What is more, Monsanto's licensing arrangements employ dual use and manufacturing licenses and necessarily would pass muster under the standards applied by *Quanta* even if they had involved the sale of nonstaple goods. Monsanto's program conforms closely to that upheld in *In re Yarn Processing Patent*

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[24] To establish common law exhaustion under Quanta, the component item must "sufficiently embod[y] the patent . . . such that its only and intended use is to be finished under the terms of the patent".

[25] North Carolina Soybean Producers Ass'n, Inc. "How Soybeans Are Used" (available on-line at http://www.ncsoy.org/ABOUT-SOYBEANS/Uses-of-Soybeans.aspx, last accessed January 15, 2013).

Validity Litigation., 541 F.2d 1127 (5th Cir. 1976), *cert. denied*, 433 U.S. 910 (1977) ("*Yarn Processing*").

1. Monsanto Avoided The Deficiencies Of The *Quanta* Agreements

It is undisputed here that Monsanto has only authorized sales of its patented RR seed to growers who have already signed the TA use license. Pet. App. 6a-7a. Those TA "single use" licenses explicitly bind the grower (a) not to replant any of the crop grown from the purchased seeds and (b) not to sell any of that crop for replanting. Pet. App. 7a.

In *Quanta*, on the other hand, no bilateral restraints whatsoever were imposed upon the purchasers of Intel's microprocessor and chipset components, and Intel's only obligation under its Master Agreement was to inform the purchasers of its nonstaple components that LGE had purported to reserve its right to sue downstream purchasers for infringement of its system and method claims. Thus, unlike the manufacturing license from LGE to Intel, the provisions of Monsanto's license to Pioneer effectively preclude application of the exhaustion doctrine based upon sales by Pioneer to TA signatories such as Bowman.

2. Monsanto's Agreements Conform To *Yarn Processing*

Monsanto's TA also conforms to the model approved by the Fifth Circuit in *Yarn Processing*. In *Yarn Processing*, a number of use licensees sued Leesona, a manufacturer of textile machinery for a declaratory judgment of invalidity and for antitrust treble damages under Section 4 of the Clayton Act.

15 U.S.C. § 15. The antitrust allegations were predicated upon a number of manufacturing licenses that Leesona issued to its competitors under a number of method patents. Those licenses authorized Leesona's licensees to sell the machinery only to throwsters who agreed to execute a royalty-bearing use license.

When the licensees challenged the provisions in the manufacturing licenses, which prohibited sales to non-licensees, the Fifth Circuit upheld that aspect of the agreements:

> There is no real question that under the terms of the machinery manufacturing licenses, the manufacturers were not allowed to sell to a throwster not licensed by Leesona. We fail to see how this is an illegal extension of the patent monopoly . . . Absent the restriction on sales to unlicensed throwsters, manufacturers who knowingly sold machinery to unlicensed throwsters would be liable for contributory infringement . . . It is well established that the patent monopoly ceases after the first sale of the patented article [citing *Univis*[26]]. Thus the restrictions imposed upon purchasers of the patented article were quite properly viewed as illegal extensions of the patent monopoly. ***But in this case, if the patents are assumed to be valid, then the restrictions on sale were***

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[26] *United States v. Univis Lens Co.*, 316 U.S. 241 (1942).

> ***within the scope of the patent grant because they were applied to a manufacturing licensee and not to a purchaser of the patented articles, and because they did no more than to prevent contributory infringement by resale to unlicensed users.***

541 F.2d at 1135 (emphasis supplied).

The Solicitor General ("SG") explicitly endorsed this holding of *Yarn Processing* during one stage of the *McFarling* litigation discussed below. In *Monsanto Co. v. McFarling*, 363 F.3d 1336 (Fed. Cir. 2004) ("*McFarling II*"), the Federal Circuit rejected both the alleged affirmative antitrust claims and patent misuse defenses of another farmer who had executed the Monsanto TA and violated the "single use" restriction by replanting second generation RR seed. McFarling sought certiorari arguing to this Court that aspects of the *Yarn Processing* decision supported his allegations of misuse and antitrust violation. This Court entered an SVSG order and the SG subsequently filed a Brief For the United States As Amicus Curiae.

The SG opposed the granting of certiorari and disagreed with McFarling's interpretation of *Yarn Processing*. The SG's brief noted that in *Yarn Processing*,

> The court, however, did not purport to invalidate *all* profit sharing between a patentee and its licensees, and expressly recognized that the patentee "had the right to license the use of the

> machinery separately from its manufacture and sale".

U.S. Br. 20, *McFarling v. Monsanto Co.*, 545 U.S. 1189 (May 27, 2005) (No. 04-31), *available at* 2005 WL 1277857. This Court denied McFarling's request for certiorari.

The restrictions imposed by the TA in this case are substantially the same as those Monsanto used in *McFarling II*. Thus, like the limitations in *McFarling II* and *Yarn Processing*, the TA limitations must pass muster in this case.

Point II.

Bowman Violated Valid And Enforceable Field Of Use Restraints Of The Type Involved In *GTP II*, *Cotton-Tie*, *J.E.M.*, *Mallinckrodt* And *McFarling II*

In light of the *General Talking Pictures* cases and the implications of *Cotton-Tie*, *J.E.M.*, *Mallinckrodt* and *McFarling II*, the NYIPLA respectfully submits that the sale of a patented object subject to a simple label license containing the single use limitation would suffice to avoid exhaustion here. By requiring Pioneer to sell its patent-licensed GM RR seed only to growers who formally executed the TA use license,[27] Monsanto employed an abundance of caution well beyond that which was strictly necessary.

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[27] Pet. App. 6a-7a.

A. The Field Of Use Limitations Upheld In *General Talking Pictures*

The *General Talking Pictures* decisions represent an endorsement by this Court of the cases exemplified by *Mitchell v. Hawley*, which have upheld otherwise lawful restrictions in manufacturing, use and label licenses against those who purchase with knowledge of such restrictions. In *GTP I*, a subsidiary of respondent AT&T had granted Transformer a nonexclusive license to manufacture and sell patented amplifiers under a label use license for non-commercial radio use only. Transformer nonetheless sold the amplifiers to General knowing that they were destined for commercial use in theaters.

This Court sustained the suit for infringement against the manufacturing-seller because "[b]y knowingly making the sales to [General] outside the scope of its license, [Transformer] infringed the patents embodied in the amplifiers".[28] Suit against the purchaser was likewise sustained because "[General], having with knowledge of the facts bought at sales constituting infringement, did itself infringe the patents embodied in the amplifiers when it leased them for use as talking picture equipment in theaters".[29] The same conclusions were reiterated on rehearing where the Court said:

> As the restriction was legal and the amplifiers were made and sold outside the scope of the license, the effect is

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[28] *GTP I*, 304 U.S. at 181-82.

[29] *Id.* at 182.

> precisely the same as if no license whatsoever had been granted to Transformer . . . And as [General] knew the facts, it is in no better position than if it had manufactured the amplifiers itself without a license. It is liable [for infringement] because it has used the invention without license to do so.[30]

B. Single Use Limitations Have Been Upheld Consistently Both By This Court And By The Court Of Appeals For The Federal Circuit

The temporal limitation at issue in *Mitchell v. Hawley* represents one type of use license restriction that has been upheld by this Court. The field-of-use limitation at issue in the *General Talking Pictures* cases represents another.[31] A third variety, involving a "single use" limitation closely akin to that employed in the Monsanto TA use license, was first upheld by this Court in *Cotton-Tie*.

Cotton-Tie involved an infringement suit under patents directed to improved metallic ties for cotton bales comprising a buckle and a band. The assignee of the patents sold its ties with a label license on the buckle bearing the legend "Licensed to use once only." The defendant purchased used buckles and the

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[30] *GTP II*, 305 U.S. at 127.

[31] Field of use restrictions were first upheld by this Court several years before *Mitchell v. Hawley* in *Providence Rubber Co. v. Goodyear*, 76 U.S. (9 Wall.) 788, 799-800 (1870). Such limitations have never been proscribed unless employed as part of cartel arrangements which facilitated market division and output restriction designed to stabilize pricing.

severed bands from cotton mills as scrap iron and constructed new ties from the scraps. The Court held that this practice could not be justified as repair and reversed the lower court's dismissal of the bill for infringement.

Another label license limitation was involved in *J.E.M.* There the Court considered a label license employed by Pioneer and pointed out that it contained the following limitations:

> License is granted solely to produce grain and/or forage . . . [and] does not extend to the use of seed from such crop or the progeny thereof for propagation or seed multiplication . . . [and strictly prohibits] the use of such seed or the progeny thereof for propagation or seed multiplication or for production or development of a hybrid or different variety of seed.

534 U.S. at 128.

A similar "single-use" limitation was upheld in *Mallinckrodt*, where Judge Newman conducted an exhaustive review of this Court's cases and harmonized the controlling principles as follows:

> Viewing the entire group of these early cases, it appears that the Court simply applied, to a variety of factual situations, the rule of contract law that a sale may be conditioned. *Adams v. Burke* and its kindred cases do not stand for the proposition that no restriction or condition may be placed upon the sale of a patented article . . . ***Unless the condition violates some***

> ***other law or policy (in the patent field, notably the misuse or antitrust law, e.g., [Univis]), private parties retain the freedom to contract concerning conditions of sale*** . . . this is not a price-fixing or tying case, and the *per se* antitrust and misuse violations found in [the earlier cases] are not here present. The appropriate criterion is whether Mallinckrodt's restriction is reasonably within the patent grant, or whether the patentee has ventured beyond the patent grant and into behavior having an anticompetitive effect not justifiable under the rule of reason.

Mallinckrodt, 976 F.2d at 708 (emphasis supplied) (footnotes and additional citations omitted).

Judge Newman also ruled that the sale had not been "in the ordinary channels of trade", but rather "the sale to the hospitals was the first sale and was with notice of the restriction" (*Id.* at 705). The single use limitation was prominently displayed on the packaging for the devices, and Judge Newman perceived support in "neither law, public policy nor logic" for distinguishing the case from the *General Talking Pictures* decisions based upon whether "the purchaser acquired the device from a manufacturing licensee or from a manufacturing patentee" (*Id.*). Invoking *GTE Sylvania*,[32] Judge Newman reasoned that:

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[32] *Continental T.V., Inc. v. GTE Sylvania, Inc.*, 433 U.S. 36, 57-59 (1977).

> The Court having disapproved reliance on formalistic distinctions of no economic consequence in antitrust analysis, we discern no reason to preserve formalistic distinctions of no economic consequence, simply because patented goods are involved.

Mallinckrodt, 976 F.2d at 705. Although *Mallinckrodt* was referred to during the oral argument in *Quanta* (Tr. 33-34, 45), the fact that it was not mentioned in the Court's unanimous opinion confirms it stands independent of the *Quanta* rule.

Quite understandably, Judge Newman's scholarly exegesis in *Mallinckrodt* has been cited and relied upon numerous times in later opinions of the Federal Circuit – most notably for purposes of this appeal in *McFarling II* as well as the biotechnology and medical device industries where single-use restrictions are prevalent.

Point III.

Each Successive Generation Of A Patented Self-Replicating Biological Material Is A Separate Actionable "Making" Under 35 U.S.C. § 271(a)

The creation of each subsequent generation of seeds by the purchaser is a new "making" within the meaning of 35 U.S.C. §§ 112, 154(a)(1) and 271(a) and is, therefore, an act of infringement. As a defense, Bowman argues that Monsanto's patent rights were exhausted. However, patent exhaustion does not apply here. An initial sale does not

extinguish the patentee's separate right to exclude others from planting progeny RR seed to make new patented RR seed.

A. The Patent Exhaustion Doctrine Does Not Apply Here

Under this Court's precedent, the authorized sale of a patented article without any conditions "exhausts the monopoly in that article and the patentee may not thereafter, by virtue of his patent, control the use or disposition of the article."[33] However, because "the purpose of the patent law is fulfilled with respect to any particular article when the patentee has received his reward for the use of his invention by the sale of the article,"[34] this Court has consistently referred to the relinquishment of patent rights only with respect to the particular article sold.[35] The purchaser of the patented article does not acquire any right to construct another machine, or to make additional generations of the patented product[36] because "the rights of ownership

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[33] *Univis*, 316 U.S. at 250.

[34] *Id.*, at 251.

[35] *See, e.g., Quanta*, 553 U.S. at 625 ("the initial authorized sale of a patented item terminates all patent rights to ***that item***") (emphasis supplied); *Univis*, 316 U.S. at 249 (exhaustion "with respect to the ***article sold***") (emphasis supplied); *Mitchell*, 83 U.S. (16 Wall.) at 547 (after authorized sale patentee "ceases to have any interest whatever in ***the patented machine so sold*** and delivered") (emphasis supplied).

[36] *Mitchell*, 83 U.S. (16 Wall.) at 548; *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 346 (1961) ("*Aro I*"). See also *Cotton-Tie*, 106 U.S. at, 93-94; *Wilson v. Simpson*, 50 U.S. (9 How.) 109,123-125 (1850).

do not include the right to construct an essentially new article on the template of the original, for the right to make the article remains with the patentee."[37]

Therefore, patent exhaustion would apply only to the article sold (the patented RR seeds sold by Monsanto or Pioneer under the TA), but not to the subsequent generation(s) of seeds covered by the patent that are grown from those first sold RR seeds. Any other conclusion would allow a purchaser to circumvent the TA restriction on replanting by selling second generation seed to a grain elevator and immediately repurchasing it along with the right to plant and harvest new crops.[38] As one commentator has noted, this is an absurd result: "Patented seed goes in at the top. When it comes out at the bottom, somehow, it is no longer protected by patents. A farmer could sell his crop to the grain elevator, and buy some of it right back, and patents would no longer apply."[39]

Bowman's creation of new RR seeds by replanting is patent infringement. The petitioner's conditional purchase[40] did not confer to him the right to make

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[37] *Jazz Photo Corp. v. Int'l Trade Commission*, 264 F.3d 1094, 1102 (Fed. Cir. 2001).

[38] *See* Pet. App. 6a-7a.

[39] Zwahlen R (2012) Seed Patents: How Innovation May Get Lost in the Grain Elevator, June 28, 2012 (available online at: http://www.biotech-now.org/public-policy/patently-biotech/2012/06/seed-patents-how-innovation-may-get-lost-in-the-grain-elevator; accessed November 27, 2012).

[40] *See* J.A. 27a.

"an essentially new article on the template of the original."

Federal Circuit law addressing patent rights to subsequent generations of biological materials such as seeds is consistent with this reasoning. In *Scruggs*,[11] the Federal Circuit, relying on *McFarling II*, reasoned that because the second-generation seeds had never been sold to Scruggs, the notion of patent exhaustion could not apply. The *Scruggs* Court concluded that the fact that a patented technology can be used to create new second generation products itself does not give a purchaser the right to use replicated copies of the technology.

Exhaustion does not apply to progeny seed because those progeny seeds were not sold and licensed by Monsanto. That a patented technology can be used to create more of itself does not alone give a purchaser the right to make or use replicated copies of the technology. Nor does it exhaust a patentee's rights over making subsequent generations of the technology.

B. Each Successive Generation Of A Self-Replicating Invention Represents A "Making"

The Patent Act confirms that the use of a patented product to make a subsequent generation is a making of a patented invention. Section 271(a) of Title 35 – which defines direct infringement – provides, in pertinent part, that, "whoever without authority ***makes***, uses, . . . any patented invention,

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[11] *Monsanto Co. v. Scruggs*, 459 F.3d 1328 (Fed. Cir. 2006) ("*Scruggs*").

within the United States . . . during the term of the patent therefor, infringes the patent." (emphasis supplied). Similarly, Section 154(a)(1) – which defines the patent rights – gives the owner of a patent the right to exclude others from "***making***" the claimed invention. In exchange for the patent rights conferred by Sections 154 and 271, the inventor must satisfy, among other things, Section 112[42] which requires, in relevant part, that a patent "contain a written description of the invention, and of the manner and process of ***making*** and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to ***make*** and use the same." (emphasis supplied). Principles of statutory construction require that Sections 154, 271(a) and 112 be read together and that the term "make" and "making" be read the same way in each.[43] Under the enablement and written description requirements of 35 U.S.C. § 112, the "making" of a patented self-replicating invention includes subsequent generations of the patented technology. Thus, the act of self-replication by patented technology is itself a "making" under Sections 271(a) and 112 of Title 35.

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[42] *See, e.g., Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 5 (1966); *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1345 (Fed. Cir. 2010); 53 Fed. Reg. 39420, 39427 (Oct. 6, 1988).

[43] *See Ratzlaf v. United States*, 510 U.S. 135, 143 (1994); *Gustafson v. Alloyd Co.*, 513 U.S. 561, 570 (1995); *Wisconsin Dep't of Revenue v. William Wrigley, Jr. Co.*, 505 U.S. 214, 225 (1992).

The PTO recognizes this reality. Its Rules define "biological material" as including material capable of self-replication, including seeds. The PTO's Rules allow inventors to satisfy Section 112 where a written description is not adequate to inform the public how to "make" the patented invention by depositing self-replicating organisms with a public depository. In such circumstances, the public availability of the biological material itself serves the statutory function of notifying the public how to "make" the biological material.[11] That is because the public learns how to "make" the material by purchasing a sample from the public depository, which then replicates itself. Because it is the act of replication of that deposit that informs the public how to "make" the patented material under § 112, the PTO recognized that self-replication itself was an act of "making."

Moreover, The PTO rules also require that a deposit of self-replicating biological material must be viable at the time of deposit and has consistently

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[11] *See* 37 C.F.R. §§ 1.801, 1.802, 1.809(a); Manual of Patent Examining Procedure ("MPEP"), §§ 2401, 2402, 2403, 2403.01, 2403.02, 2404, 2404.01, 2404.02, 2404.03, 2411, 2411.01 (Fifth Ed., Rev. 15, Aug. 1993); *see Enzo Biochem, Inc. v. Gen-Probe, Inc.*, 323 F.3d 956 (Fed. Cir. 2002) ("depositing biological material to satisfy . §112, ¶1."); see also 52 Fed. Reg. 34080 (Sept. 9, 1987) ("patent must contain a written description of the invention adequate to instruct a person skilled in the art to which the invention pertains how to make and use the invention. In certain instances the written description . . . may not in itself be adequate to permit reproduction of the invention. In these cases, the written description must be supplemented by a deposit of the biological material which constitutes the invention"); accord 53 Fed. Reg. 39420 (Oct. 6, 1988); 54 Fed. Reg. 34864 (Aug. 22, 1989).

defined an acceptable depository for patent purposes as one that "[p]ossess[es] the staff and facilities sufficient to examine the viability of a deposit."[45] In its rulemaking, the PTO stated:

> The availability of the deposited biological material which is essential for making and/or using the subject matter claimed in the patent is a legitimate ground for concern on the part of the [PTO][.] . . . The viability of a deposit . . . is a requirement. . . . The viability test must conclude that the deposited biological material is capable of reproduction[.][46]

By these rules, the PTO has recognized that creating a successive generation of a self-replicating biological material is how one demonstrates "making . . . the subject matter claimed in the patent."[47] Because Sections 112(a) and 271(a) both use the word "make," each successive generation of a seed is also a "making" under 35 U.S.C. § 271(a).[48]

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[45] 37 C.F.R. § 1.803(a)(2)(iii); *see also* 37 C.F.R. § 1.807,; MPEP, § 2405 (Fifth Ed., Rev. 15, Aug. 1993).

[46] 52 Fed. Reg. 34080 at 34082-34083 (Sept. 9, 1987).

[47] *Id.*

[48] The petitioner's argument that planting of patented seed to generate new seed does not constitute a "making" of newly infringing seed is also technically incorrect. So too is the petitioner's assertion that seeds will self-replicate without farmer assistance. At grades 2-4, school children are taught that plants require sunlight, water, nutrients, carbon dioxide and space to grow; and without water or air, *e.g.*, if unplanted, a seed will not grow. *See, e.g.*, Emery, P, "What Do Plants Need To Grown (July 1993, for the California Foundation for

C. The Biotechnology Sector Reasonably Expects That Each Successive Generation Of A Patented Self-Replicating Biological Material Represents A Separate "Making" Under § 271(a)

From at least as early as 1873 with the grant of U.S. Patent No. 141,072 to Louis Pasteur, the biotechnology sector has invested in research and development with the understanding that its inventions were subject to full patent rights. In making the investment in that research, the industry did so expecting that the making of subsequent generations of patented materials is protected by patent rights. This expectation is grounded in § 271(a) ("[t]he patent statute grants the patentee the right to exclude others from making, using, or selling the patented subject matter. . . Any of these activities during the patent term is an infringement of the patent right"[49]), Supreme Court (*J.E.M.* and *Asgrow*,[50] as discussed below) and Federal Circuit precedent ("the rights of ownership do not include the right to construct an essentially new article on the template of the original, for the right to make the

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Agriculture in the Classroom) (available online at www.cfaitc.org/lessonplans/pdf/401.pdf, last accessed January 2, 2013).

[49] *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1573 (Fed. Cir. 1996).

[50] *Asgrow Seed Co. v. Winterboer*, 518 U.S. 179 (1995) ("*Asgrow*").

article remains with the patentee."[51]) and the PTO Rules discussed above.

Case law reflects this expectation. For example, in *Intervet America Inc. v. Kee-Vet Labs, Inc.*,[52] Intervet's patent claimed a "live vaccine . . . comprising a live . . . virus belonging to the strain deposited at the ATCC[53] under No. VR-2041." There was no dispute between the parties that the act of "making" a replica of the inventive virus that was on public deposit and using it to grow additional generations for use as a vaccine was an act of the infringement. Rather, the issue raised in *Intervet* was whether those later generation products met the claim limitations. The position taken by the parties in *Intervet* demonstrates the biotechnology sector's acceptance and reasonabe expectation that each successive generation of a patented self-replicating biological material is a separate "making" constituting an act of infringement under § 271(a).

If this Court were to adopt petitioner's position, it would lead to absurd results. First, it would effectively authorize a party such as Kee-Vet to purchase Intervet's patented "live vaccine" or acquire the virus No. VR-2041 from the ATCC, grow successive generations of the live virus therein, and sell vaccine from those successive generations of the live virus, contrary to the long-standing and well-founded expectations that such conduct is patent infringement. It also would be contrary to public

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[51] *E.g.*, *Jazz Photo Corp. v. Int'l Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001).

[52] 887 F.2d 1050, 1052 (Fed. Cir. 1989).

[53] "ATCC" stands for the American Type Culture Collection.

policy to permit the deposit of biological material by the inventor and the purchase from the depository by a third party to exhaust the patent rights by permitting its use for growing successive generations of the virus for the production of a competing vaccine before the expiration of the patent. Indeed, if the act of depositing biological material necessary to inform the public how to "make" the patented invention resulted in the exhaustion of a patentee's rights, it would undermine the *quid pro quo* underlying our patent system – a limited right to exclude in return for teaching the public how to make and use the invention – potentially causing inventors to forego patent rights and maintain the secrecy of their inventions.

Second, as set forth in the SG's Brief (pages 13-15), such a decision would be inconsistent with this Court's rulings in *J.E.M.* and *Asgrow* that utility patents bestow greater rights then PPVA and PVP Certificates.[54] As this Court previously recognized, "[b]ecause of the more stringent requirements, utility patent holders receive greater rights of exclusion than holders of" PVPA Certificates" as "there are no exemptions for research or saving seed under a utility patent."[55]

The biotechnology sector reasonably expects that the sale of biological material will not exhaust patent rights to second and subsequent generations of such materials. A ruling by this Court for petitioner that

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[54] Pursuant to admonition against duplicative briefing of Rule 37.1, the NYIPLA will be relying on the SG's Brief's detailed discussion of those cases.

[55] *J.E.M.*, 534 U.S. at 143.

exhaustion does apply to second-generation seeds would represent a revolutionary and unnecessary change.[56]

CONCLUSION

For the foregoing reasons, the Court should affirm the decision of the Federal Circuit.

Respectfully submitted,

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[56] The Court's discussion in *Quanta* of "making" the patented combination was premised upon its conclusion that only "standard finishing" separated the Intel microprocessors and chipsets from the claimed computer systems – a far cry from the "making" of an unauthorized crop from second generation seed which had never been sold or authorized for sale for planting purposes. To change the law as Bowman requests would, as the SG points out, extinguish all of Monsanto's patent rights predicated upon the sale of a single RR seed.

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AMICUS CURIAE BRIEF

RECORD AND BRIEFS

No. 11-796

JAN 23 2013

In The Supreme Court of the United States

VERNON H. BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, ET AL.,

Respondents.

On Writ Of Certiorari To The United States Court Of Appeals For The Federal Circuit

BRIEF OF AMICUS CURIAE PIONEER HI-BRED INTERNATIONAL, INC. IN SUPPORT OF RESPONDENTS MONSANTO COMPANY, ET AL.

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INTEREST OF THE AMICUS CURIAE

Pioneer Hi-Bred International, Inc. ("Pioneer") is the world's leading producer of soybean seeds, and its seeds are at issue in this litigation. Pioneer's Plant Variety Protection Act rights were violated in transactions giving rise to this litigation, and this Court's consideration of the issues Pioneer raises here may illuminate the intersection between the law of plant variety protection and utility patents.[1] Pioneer further has an interest in the protection of the rights of holders of valid utility patents in this technology area.[2]

SUMMARY OF ARGUMENT

In 1999, Vernon Bowman purchased soybeans from Huey Soil Services (the "Elevator") for planting

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[1] Amicus notified the parties of the intention to file this brief ten days prior to the brief's due date. The parties have consented to the filing of this brief. No counsel for a party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than amicus curiae or its counsel made a monetary contribution to this brief's preparation or submission.

[2] In other litigation, Pioneer contests the validity and enforceability of the RE247 patent at issue in this case. Consistent with Pioneer's view that the RE247 patent is invalid and unenforceable, Pioneer's amicus brief argues only the specific issues raised herein related to patent exhaustion on the facts before the Court.

as a second crop. Contrary to Bowman's assertion that farmers rely on commodity grain as a source of seed for planting even in the absence of utility patent rights (*see*, *e.g.*, Pet. Br. at 6), federal law prohibits commodity grain from being used in this way. Transactions like these violate the Plant Variety Protection Act ("PVPA"), 7 U.S.C. §§ 2321 *et seq.*, and federal and state labeling laws. Therefore patent exhaustion is not a defense available to Bowman.

The PVPA protects soybean varieties in the commodity stream of commerce, including Roundup Ready® seeds Pioneer sold to farmers. Given the significant market presence of Pioneer in the soybean market and the fact that the Elevator sells commodity soybeans in a disaggregated fashion, it is a certainty that commodity soybeans the Elevator sells to farmers contain PVPA protected Roundup Ready® seeds. Pioneer provided notice to Bowman that its seeds were PVPA protected by affixing a label that stated "Unauthorized Propagation Prohibited" on each bag of Pioneer Roundup Ready® seeds. Bowman agrees there was no deficiency in the labeling of the seeds he purchased as a first crop.

Patent exhaustion is an equitable-type defense. As a result, Bowman's invocation of the patent exhaustion defense is subject to equitable considerations, such as whether Bowman has clean hands. Bowman's arguments misconstrue the "authorized sale" requirement of the patent exhaustion defense to focus exclusively on authorization under patent and contract law, ignoring the fact that sales of the type

at issue in this case violated state and federal law, including the PVPA.

Here, Bowman's patent exhaustion is not a viable defense for two reasons. First, diversion of seed from the commodity channels for reproductive purposes is illegal. Consequently, the patent exhaustion doctrine is not applicable in this case because there was no "authorized sale." Second, because Bowman violated the PVPA, he has unclean hands. To the extent that patent exhaustion is equitable, principles of equity do not favor permitting farmers in Bowman's position to interpose a patent exhaustion defense. Doing so would allow farmers to vitiate PVPA protections by laundering seeds through a grain elevator intermediary and afford a lawbreaker the same relief as a bona fide purchaser.

ARGUMENT

I. Diversion Of Protected Varieties From The Commodity Channel To Reproductive Purposes Is Unlawful And Therefore Cannot Be An "Authorized Sale"

A. The PVPA Provides Patent-Like Protection To Seeds Registered By A PVPA Certificate Holder

In 1970, Congress enacted the Plant Variety Protection Act ("PVPA"). *See* 7 U.S.C. § 2321 *et seq.* The PVPA "provide[s] developers of novel plant varieties with 'adequate encouragement for research, and

for marketing when appropriate, to yield for the public the benefits of new varieties.'" *Asgrow Seed Co. v. Winterboer*, 513 U.S. 179, 181 (1995) (quoting 7 U.S.C. § 2581). "The PVPA extends patent-like protection to novel varieties of sexually reproduced plants (that is, plants grown from seed) which parallels the protection afforded asexually reproduced plant varieties (that is, varieties reproduced by propagation or grafting) under Chapter 15 of the Patent Act." *Id.* "The developer of a novel variety obtains PVPA coverage by acquiring a certificate of protection from the Plant Variety Protection Office." *Id.* (citing 7 U.S.C. §§ 2421, 2422, 2481-2483). Here, there is no question that the Pioneer seed at issue containing Monsanto's Roundup Ready® trait is PVPA protected.

The PVPA provides patent-like protection for sexually reproduced novel plant varieties, defining as infringement a number of discrete acts. *See* 7 U.S.C. § 2541(a)(1)-(10). For example, it is an act of infringement to "sell or market the protected variety, or offer it or expose it for sale, deliver it, ship it, consign it, exchange it, or solicit an offer to buy it, or any other transfer of title or possession of it." 7 U.S.C. § 2541(a)(1). It is an act of infringement to "use seed which had been marked 'Unauthorized Propagation Prohibited' or 'Unauthorized Seed Multiplication Prohibited' or progeny thereof to propagate the variety," 7 U.S.C. § 2541(a)(5), or to "dispense the variety to another, in a form which can be propagated, without notice as to being a protected variety under which

it was received." 7 U.S.C. § 2541(a)(6). And it is also an act of infringement to "instigate or actively induce performance of any" of the number of discrete acts of infringement identified in the statute. 7 U.S.C. § 2541(a)(10).

A PVPA certificate holder cannot recover for an act of infringement if "the variety is distributed by authorization of the owner and is received by the infringer without" a label containing the words "Unauthorized Propagation Prohibited" or "Unauthorized Seed Multiplication Limited," unless an infringer has "actual notice or knowledge that propagation is prohibited or that the variety is a protected variety." 7 U.S.C. § 2567. The inquiry into whether or not an accused infringer has actual notice or knowledge requires a determination of whether the purchase of a PVPA protected plant variety was a "bona fide sale for other than reproductive purposes" or not. 7 U.S.C. § 2543. In pertinent part, the statute states:

> A bona fide sale for other than reproductive purposes, made in channels usual for such other purposes, of seed produced on a farm either from seed obtained by authority of the owner for seeding purposes or from seed produced by descent on such farm from seed obtained by authority of the owner for seeding purposes shall not constitute an infringement. *A purchaser who diverts seed from such channels to seeding purposes shall be deemed to have notice under section 2567 of this* ***title that the actions of the purchaser constitute an infringement.***

Id. (emphasis added). Thus, a purchaser of commodity seeds infringes PVPA rights where they exist when he "diverts" for "seeding purposes."

B. Farmers In Bowman's Position Have Notice That The PVPA Protected The Roundup Ready® Soybeans He Purchased From The Elevator

Monsanto markets Roundup Ready® seeds under its own brand. Monsanto also licenses the Roundup Ready® technology to other seed companies, such as Pioneer. Pioneer then markets Roundup Ready® seed under its own brand, which farmers subsequently purchase. *See Monsanto Co. v. Scruggs*, 342 F. Supp. 2d 584, 588 (N.D. Miss. 2004) (describing the history of Roundup Ready® soybeans).

Pioneer marks all seed bags containing Roundup Ready® seed. The label Pioneer affixes to each seed bag contains language indicating PVPA protection. *See Scruggs*, 342 F. Supp. 2d at 588 fn. 3 (describing Monsanto's use of a PVPA seed bag label to protect Monsanto's Asgrow variety soybeans) ("This Asgrow variety is protected by the Plant Variety Protection Act (7 United States Code §§ 2321 *et seq.*) and/or the Patent Act (35 United States Code §§ 1 *et seq.*). The purchaser is authorized by Asgrow to plant this variety and use the resulting crop for food or sell the crop as grain. Asgrow does not authorize the use or sale of the crop as seed. UNAUTHORIZED PROPAGATION PROHIBITED."). Pioneer has over 30% of

the national soybean market,[3] and in commodity purchases like those at issue here Pioneer seed is assuredly present.

Farmers in Bowman's circumstances have the required statutory notice that the commodity soybeans they purchase are protected varieties. First and foremost, purchase of soybeans containing the patented trait from an elevator for replanting is not "a bona fide sale for other than reproductive purposes." 7 U.S.C. § 2543. Indeed, Bowman's purchase of Roundup Ready® soybeans from the Elevator was for seeding purposes – the very action that provides notice as a matter of law that "the actions of the purchaser constitute an infringement." *Id.*

Second, Pioneer's customers have constructive notice that the seeds purchased from the commodity channel are PVPA protected. For example, Bowman admits he purchased Pioneer Roundup Ready® soybeans for his first crop. *See* Dckt. 73, First Affidavit of Vernon Hugh Bowman, at ¶ 20 ("In recent years, the seed has been purchased from a Pioneer dealer.");[4] *see also* Pet. Br. at 7 ("Beginning in 1999 on fields where Bowman did not plant double-crop

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[3] See http://www.seedtoday.com/info/ST_articles.html?ID=101521 (last visited January 21, 2013).

[4] Citations to "A" refer to the Joint Appendix before the Federal Circuit; "Dckt." to the district court record in case 2:07-cv-283-RLY-WGH; "PA" to the Petition Appendix; "JA" to the Joint Appendix before this Court; and "SA" to the Supplemental Joint Appendix before this Court.

soybeans, he planted first-generation, first-crop Roundup Ready® soybeans purchased from Pioneer Hi-Bred International, Inc."). And Bowman also admits the bags of Pioneer Roundup Ready® soybeans he purchased as a first crop were properly marked. *See* A0248, A0631, A0663. Because Bowman planted Pioneer Roundup Ready® seeds as a first crop, he knew that the only soybeans resistant to glyphosate-based herbicides were Roundup Ready® seeds. As a result, Bowman became aware that the "commodity soybeans" he purchased from the Elevator were Roundup Ready® seeds (and in some proportion assuredly Pioneer protected varieties) when he sprayed Roundup® on the fields he planted and the soybeans did not die.

C. Purchase From The Commodity Channel And Planting Of Pioneer's Roundup Ready® Seeds Violates The PVPA In A Number Of Different Ways

Bowman argues that he "used his purchased [commodity soybeans] in a natural and foreseeable way – he planted them," (Pet. Br. at 50) and that a finding of exhaustion would "destroy a bona fide purchaser's reasonable and expected property interest." *Id.* at 50-51. He also claims that he purchased "seed" in an authorized sale from the Elevator. Those assertions are fundamentally unsound because Bowman's concept of "authorization" focuses exclusively on patent and contract law, ignoring the unauthorized nature of purchases like these. As stated

above, those farmers purchasing from the commodity channel for reproductive purposes have statutory notice and violate the PVPA. 7 U.S.C. § 2543. As an example here, the very acts in which Bowman admits he engaged constitute infringement under 7 U.S.C. § 2541(a), and therefore are prohibited by the PVPA.

First, Bowman admits to using the commodity soybeans he purchased for seeding purposes. Bowman therefore "use[d] seed which had been marked . . . to propagate the variety" in violation of 7 U.S.C. § 2541(a)(5). Second, Bowman conditioned the Roundup Ready® soybeans he purchased for the purpose of propagation in violation of 7 U.S.C. § 2541(a)(7). Thus, Bowman's initial purchase of Roundup Ready® soybeans from the Elevator was not an authorized sale because it was for purposes that violate the PVPA. 7 U.S.C. § 2541(a)(10) (infringement to "instigate or actively induce performance of any of the foregoing acts.").

D. Commodity Sale Of Pioneer's Roundup Ready® Seeds Violates Additional Provisions Of State And Federal Law And Therefore Could Not Be Authorized

Elevators also infringe the PVPA by selling to farmers PVPA protected Roundup Ready® soybeans for reproductive purposes (as opposed to a bona fide purpose to feed animals, for example). As an initial matter, an elevator is liable as a "diverter" under 7 U.S.C. § 2543 and has the requisite statutory

notice. An elevator may also violate several provisions of Section 2541. First, it may sell or market the PVPA protected Roundup Ready® soybeans in violation of 7 U.S.C. § 2541(a)(1). Second, elevators would be stocking protected varieties for the purpose of selling or marketing the soybeans in violation of 7 U.S.C. § 2541(a)(8). Third, elevators may dispense Roundup Ready® soybeans as commodity beans, without providing notice as to their being a PVPA protected variety in violation of 7 U.S.C. § 2541(a)(6). And finally, an elevator may instigate a farmer like Bowman's own acts of infringement in violation of 7 U.S.C. § 2541(a)(10). Each of these infringements may have occurred in this very case.

Bowman's arguments suggest the transaction between the Elevator and Bowman is proper because the Elevator sold the Roundup Ready® soybeans as part of an undifferentiated mixture of seeds. But this is of no moment. To the extent the Elevator sold the seeds as a mixture, federal and Indiana labeling laws required the Elevator to specify the variety of seed contained in the mixture. Section 15-15-1-40 of the Indiana Code, for example, states that "[a] person may not distribute agricultural or vegetable seed within Indiana . . . [i]f the seed is not labeled in accordance with this chapter." The referenced chapter requires:

> A container of agricultural seed of any size . . . distributed in Indiana for sowing and seeding purposes must contain or have attached in a conspicuous place on the outside

> of the container a plainly written or printed tag or label in English giving . . . the commonly accepted name of each kind and variety of each agricultural seed component that exceeds five percent (5%) of the whole. . . .

Indiana Code § 15-15-1-32(a)-(b)(1). The Federal Seed Act, 7 U.S.C. §§ 1571 *et seq.*, has a similar provision. *See* 7 U.S.C. § 1571(a)(1) (requiring varietal labeling of seed mixtures). That statute "makes it unlawful for any person to transport or to deliver for transportation in interstate commerce agricultural seeds with untruthful labels." *E.K. Hardison Seed Co. v. Jones*, 149 F.2d 252, 256 (6th Cir. 1945). And as part of the federal labeling requirement, when *a* single seller like Pioneer uses a variety name to label seeds, such as Roundup Ready® soybeans, *all* downstream sellers must use the same variety name. *See Doebler's Pa. Hybrids, Inc. v. Doebler*, 442 F.3d 812, 830 (3d Cir. 2006). Thus, if the Elevator did not properly label the seeds it sold Bowman, the Elevator violated both federal and state laws, and therefore could not have made an authorized sale.

II. Patent Exhaustion Is Not Available For Unauthorized Sales

If patent exhaustion is an equitable defense it is subject to equitable retorts. Here, Bowman has unclean hands. His diversion and possession of marked commodity seed from the Elevator violated the PVPA. The Elevator dispensed a protected variety of seed with notice and also potentially violated

federal and state labeling laws. Consequently, the patent exhaustion defense cannot excuse Bowman's purchase and possession of the Pioneer Roundup Ready® seed he planted as a second crop. Doing so would treat lawbreakers the same as bona fide purchasers.

A. Patent Exhaustion Is An Equitable Defense Subject To Equitable Considerations

This Court has not explicitly stated that the patent exhaustion defense is an equitable defense. The defense is not found in the U.S. Constitution, or any patent law promulgated thereunder. Instead, the defense is a construct created and first applied by the Court in the 19th century. *See Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617, 625 (2008) (describing the history of the patent exhaustion doctrine). The first case in which the Court applied the patent exhaustion doctrine was an appeal from a court of equity. *See Bloomer v. McQuewan*, 55 U.S. 539 (1852). The same is true for the second. *See Bloomer v. Millinger*, 68 U.S. 340 (1863); *see also Birsell v. Shaliol*, 112 U.S. 485, 487 (1884).

Patent exhaustion shares a common origin with the patent misuse defense, the equitable roots of which this Court, courts of appeals, and district courts explicitly recognize. *See Morton Salt Co. v. G. S. Suppiger Co.*, 314 U.S. 488, 492-94 (1942) ("It is a principle of general application that courts, and

especially courts of equity, may appropriately withhold their aid where the plaintiff is using the [patent monopoly] contrary to the public interest."); *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1372 (Fed. Cir. 1998) ("The defense of patent misuse arises from the equitable doctrine of unclean hands."); *Monsanto Co. v. Swann*, 308 F. Supp. 2d 937, 942 (E.D. Mo. 2003) ("Patent misuse is an equitable defense to an infringement claim. . . ."). Both patent misuse and patent exhaustion cases originally addressed the factual scenario in which a patent holder tries to expand his patent monopoly through post-sale restrictions and tying, using an infringement suit as an enforcement mechanism. For example, in *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 518 (1917), the Court rejected a patent infringement action under the patent exhaustion doctrine when a patent holder attempted to limit purchasers' use of film projectors to show only film made under a different patent held by the same company. And in *Morton Salt Co. v. G. S. Suppiger Co.*, 314 U.S. 488, 493-94 (1942), the Court dismissed a patent infringement action under the patent misuse doctrine when the patent holder of a machine for depositing salt tablets attempted to restrict purchasers' use of the patented machine to salt tablets manufactured by the patent holder's subsidiary. *See also Dawson Chem. Co. v. Rohm and Haas Co.*, 448 U.S. 176, 193 (1980) (describing *Morton Salt* as linking "the doctrine of patent misuse to the 'unclean hands' doctrine traditionally applied by courts of equity.") The equitable underpinnings of both *Universal Film*

Mfg. Co. and *Morton Salt* are clear. In each, the patent holder is not using the right asserted by a patent monopoly toward the public interest of promoting "the Progress of Science and useful Arts." U.S. Const., Art. I, § 8, cl. 8.

The common origins between patent exhaustion and patent misuse explain litigants' frequent inclusion of patent exhaustion among the equitable defenses they plead. *See, e.g., Barnes & Noble, Inc. v. LSI Corp.*, 849 F. Supp. 2d 925, 928 (N.D. Cal. 2012) ("Unenforceability due to standards-setting misconduct (on the grounds of estoppel, fraud, laches, waiver, implied waiver, unclean hands, patent exhaustion, implied license, and/or other equitable doctrines)."); *Apple Inc. v. Samsung Electronics Co., Ltd.*, No. 11-CV-01846-LHK, 2011 WL 4948567, at *10 (N.D. Cal. Oct. 18, 2011) ("Finally, Apple's Thirty-Second Counterclaim is also duplicative of its Affirmative Defense and does not appear to offer any additional relief. The Thirty-Second Counterclaim requests a declaration that Samsung's asserted patents are unenforceable 'by virtue of estoppel, laches, waiver, unclean hands, patent exhaustion, implied license, and/or other equitable doctrines applicable to such misconduct.'") (internal citations omitted).

To the extent that patent exhaustion is an equitable defense, other principles of equity should inform its application.

B. Equitable Considerations Favor Monsanto Because Bowman Has Unclean Hands

The guiding principle at play in this case is the maxim: "he who comes into equity must come with clean hands." "[W]hile equity does not demand that its suitors shall have led blameless lives, as to other matters, it does require that they shall have acted fairly and without fraud or deceit as to the controversy in issue." *Precision Instrument Mfg. Co. v. Auto. Maint. Mach. Co.*, 324 U.S. 806, 815-16 (1945) (internal quotations and citations omitted).

Farmers who divert commodity seed to reproductive purposes in violation of the PVPA do not have clean hands. Nor do they act "fairly and without fraud or deceit as to the controversy in issue." *Id.* Bowman himself violated the PVPA by purchasing Roundup Ready® seeds from the Elevator for reproductive purposes; and the Elevator may have violated state and federal law as well. As a result, the doctrine of unclean hands precludes application of the patent exhaustion defense in this case. Had Bowman obeyed the law he never could have committed the acts Monsanto accuses of infringing its utility patent. This Court should not permit Bowman to profit from an equitable defense that he obtained only by infringement of Pioneer's rights.

CONCLUSION

For the foregoing reasons, Pioneer urges the Court to affirm the decision of the U.S. Court of Appeals for the Federal Circuit or alternatively to dismiss the writ as improvidently granted.

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AMICUS CURIAE BRIEF

No. 11-796

In the Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY ET AL.,

Respondent.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF OF THE PUBLIC PATENT FOUNDATION AS *AMICUS CURIAE* IN SUPPORT OF PETITIONER

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INTEREST OF THE *AMICUS CURIAE*[1]

The Public Patent Foundation ("PUBPAT") is a not-for-profit legal services organization affiliated with the Benjamin N. Cardozo School of Law. PUBPAT's mission is to protect freedom in patent system. PUBPAT represents the public interest against undeserved patents and unsound patent policy. PUBPAT has argued for sound patent policy before this Court, various Courts of Appeals and District Courts, Congress, the U.S. Patent & Trademark Office (PTO), and many other national and international bodies. PUBPAT is a leading provider of public service patent legal services and one of the loudest voices advocating for comprehensive patent reform.

PUBPAT has an interest in this matter because the decision of this Court will have a significant effect on the public interest PUBPAT represents. Specifically, PUBPAT seeks to ensure that freedom and free markets are not unduly constrained by patentees who attempt to exert control beyond the scope of their patent rights. The Court of Appeals' decision below created an exemption from patent exhaustion for self-replicating technologies that departs from the established law of this Court and sound patent policy. PUBPAT believes this brief, authored by a registered patent attorney and

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[1] In accordance with Supreme Court Rule 37.6, *Amicus Curiae* states that: (1) no counsel to a party authored this brief, in whole or in part; and (2) no person or entity, other than amicus, their members and counsel have made a monetary contribution to the preparation or submission of this brief.

professor of patent law, provides the Court with relevant legal and factual information that may not otherwise be brought to its attention.

SUMMARY OF ARGUMENT

The doctrine of exhaustion provides a necessary limit on the ability of patentees to pervert markets beyond the scope of their patents. Sophisticated patent owners like Monsanto can be expected to take limits on their patent rights, including exhaustion, into account when designing their business models. Monsanto's attempt to contract around exhaustion is impotent and not legally sustainable. Patent rights are not recreated anew upon the production of new seed from purchased seed in which Monsanto's patent rights were exhausted upon the authorized sale.

ARGUMENT

I. IF PROGENY SEED ARE EXCEPTED FROM EXHAUSTION, THEN CONTAMINATED FARMERS ARE INFRINGERS

Despite the popularity of Monsanto's seed, there are tens of thousands of organic and conventional growers who seek to farm exclusively with seed that is free of genetic modification. These farmers neither purchase Monsanto seed nor wish to grow it. Yet they are at risk for inadvertent infringement in light of the Circuit's broad ruling.

Monsanto's genetically modified, or transgenic, seed can contaminate non-transgenic seed in numerous ways. Transgenic seed finds its way into conventional seed at every stage of the production process including through seed drift and scatter,

cross-pollination, commingling during harvest and post-harvest activities, processing, transportation, and storage. *See, e.g., Organic Seed Growers and Trade Ass'n v. Monsanto Co.*, 851 F. Supp. 2d 544, 548 (S.D.N.Y. 2012). As a result, organic and conventional growers may unintentionally plant and grow Monsanto's patented seed without knowledge unless and until they test their crop.

The Federal Circuit's ruling would not exclude contaminated organic and conventional farmers from a finding of infringement. The decision was not limited to growers who intentionally grow transgenic seed and/or spray glyphosate on their crop. Instead, the Circuit found that as long as there is a use for seed other than planting, patent rights in its progeny are protected: "The court disagrees with Bowman that a seed 'substantially embodies' all later generation seeds, at least with respect to the commodity seeds, because nothing in the record indicates that the 'only reasonable and intended use' of commodity seeds is for replanting them to create new seeds." *Monsanto Co. v. Bowman*, 657 F.3d 1341, 1348 (Fed. Cir. 2011) (citing *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617, 631 (2008)).

The court continued that commodity seed could be used "as feed, or for any other conceivable use." *Id.* This statement could apply to virtually any seed. The Circuit's finding that planting seeds is "making" them for purposes of infringement makes a patent infringer out of any organic or conventional farmer whose land is contaminated with Monsanto's genetically modified seed.

Monsanto claims not to prosecute farmers who inadvertently grow trace amounts of seed,[2] but that claim does not save the Circuit ruling. First, Monsanto's "Commitment" is not legally enforceable and is subject to change without notice. Second and more importantly, even if it were true that Monsanto would never enforce its patents against unintentional infringers, it isn't legal for them to do so. Monsanto is legally restrained from accusing of infringement organic and conventional farmers who suffer the misfortune of contamination with Monsanto's seed. The Federal Circuit finding that growing seed is "making" a new infringing article thus must not stand.

II. THE CIRCUIT'S THEORY INDICATES THAT MONSANTO'S CUSTOMERS ROUTINELY MAKE AND SELL NEW INFRINGING ARTICLES

Upon close scrutiny, it is evident that the Federal Circuit's rationale for exhaustion contradicts itself. The Circuit held that the progeny of seed purchased in an authorized sale is a newly infringing article: "[O]nce a grower, like Bowman, plants the commodity seeds containing Monsanto's Roundup Ready® technology and the next generation of seed develops, the grower has created a newly infringing article." *Monsanto Co. v. Bowman*, 657 F.3d 1341, 1348 (Fed. Cir. 2011). It cited *Jazz Photo* for the proposition that the right to use "does not include the right to construct an essentially new article on the template of the original, for the right to make the

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[2] *See* "Monsanto's Commitment: Farmers and Patents," http://www.monsanto.com/newsviews/Pages/commitment-farmers-patents.aspx (last visited December 4, 2012).

article remains with the patentee." *Id.* (citing *Jazz Photo Corp. v. Int'l Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001)). It found that, even if the seed sale to the grain elevator was authorized, Bowman's action of growing commodity seed was "making" Monsanto's patented technology for purposes of infringement. *Id.*

If the Circuit's theory on infringement is correct, and planting soybeans constitutes "making" a new infringing article, then the theory should make sense when applied to other authorized soybean sales. When an authorized grower of Monsanto soybeans sells his crop ultimately to be consumed as edamame in a sushi restaurant or processed into soybean oil or tofu, he is selling the very item that Monsanto patented.[3] What's more, he is, to use the Circuit's own words, selling a "newly infringing" article rather than the one he purchased. And in order to have the soybeans to sell, that grower had to, according to the Circuit, "make" that newly infringing article.

Of course if Monsanto viewed a grower's sale of second-generation soybeans as sale of a newly infringing article and wanted to authorize such sales, it could license its growers to sell the next-generation goods. It did not. Instead, the only explicit rights the grower receives in the Technology Agreement are an "[o]pportunity to purchase and

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[3] Biologically speaking, beans are seeds. Thus in the case of a crop like soybeans, the part of the plant that is harvested not only contains patented glyphosate-tolerant cells; it is the same part that could be used to plant a subsequent generation of plants comprising glyphosate-tolerant plant cells. *See Monsanto Co. v. Bowman*, 657 F.3d 1341, 1344 (Fed. Cir. 2011).

plant" Monsanto seed and an "[o]pportunity to participate in the Technology Value Package." See http://www.scribd.com/doc/115842666. While the Technology Agreement included express contractual restrictions on a grower's use or supply of seed for replanting, it did not expressly authorize sale of next-generation crop or even sale of next-generation seed to grain elevators.

But, it didn't need to include such permission, as the first-generation seeds it sold the growers fully embodied the patent, and thus the patent rights in the generations which resulted from its use were exhausted by the authorized sale of the seeds from which they grew. *See Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617, 630 (2008) (invoking "the longstanding principle that, when a patented item is once lawfully made and sold, there is no restriction on its *use* to be implied for the benefit of the patentee." (emphasis original, internal citations omitted)).

Monsanto's actions confirm that patent rights in seed progeny were exhausted upon first-generation seed sale to growers: despite not extending a license to growers for crop sales, Monsanto does not condemn the sale of next-generation soybeans as infringement. To the contrary, Monsanto's business depends on authorized growers making and selling the next-generation products of its bagged seed. Its Technology Agreement even directs growers to plant the seed they purchase in a "commercial" crop. *Monsanto Co. v. Bowman*, 657 F.3d 1341, 1344 (Fed. Cir. 2011). Further, Monsanto stated in its opposition to the petition for certiorari, "A grower who plants Roundup Ready® seed may sell the

harvested crop through customary distribution channels as a commodity, or for use as animal feed." Brief in Opposition, *Bowman v. Monsanto Co.* (No. 11-796) , 2011 U.S. Briefs 796, at *2, 2012 U.S. S. Ct. Briefs LEXIS 913, at **4 (Feb. 27, 2012).

The Circuit agreed with Monsanto that while making and selling second-generation seed, a supposed "newly infringing article," is permissible for authorized Monsanto growers who lack a license to sell, using second-generation seed as described in the patent is impermissible for anyone. The Federal Circuit's ruling amounts to an announcement that, despite the Federal Circuit's interpretation of *Jazz Photo*, one can make and sell newly infringing seed without a patent license as long as one doesn't plant it. Such a distinction between the activities that promote Monsanto's business model and those that warrant an infringement lawsuit reflects at best confusion between contract violation and patent infringement.[4] At worst, the distinction reflects a holding that although "infringement" that supports Monsanto's business is acceptable, "infringement" from which Monsanto does not profit is unacceptable.

The internal contradiction in the Circuit's ruling demonstrates that the true and logical legal end to Monsanto's patent rights in its seed is at the point of

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[4] The Federal Circuit may also have confused license of a product, in which the patentee retains patent rights, with license of a patent. Per the terms of the Technology Agreement, Monsanto purports to license its patents in conjunction with the sale of its seeds to authorized growers. But that purported patent license does not change the fact that the sale exhausts patent rights in the seeds.

any authorized sale, including sale of first-generation seed to a grower. This is why growers don't need an express license to sell second-generation seed. Even if an authorized grower bought seed and then sold its progeny for planting to another in violation of the Technology Agreement, the second, unauthorized sale would not violate Monsanto's patent rights[5], as sale and use of products born from use of first-generation seeds sold in an authorized sale do not constitute infringement under binding case law. *See United States v. Univis Lens Co.*, 316 U.S. 241 (1942); *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008).

CONCLUSION

For the foregoing reasons, this Court should reverse the Court of Appeals' decision below and hold that the authorized sale of an item embodying self-replicating technology exhausts patent rights in that item and the products of its use.

Respectfully submitted,

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[5] Of course Monsanto would be entitled to remedies for any contract violation from any party with whom it had contracted.

AMICUS CURIAE BRIEF

RECORD
AND
BRIEFS

No. 11-796

IN THE
Supreme Court of the United States

VERNON HUGH BOWMAN,

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MONSANTO COMPANY, *et al.*,

Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF OF WASHINGTON LEGAL FOUNDATION *AS AMICUS CURIAE* IN SUPPORT OF RESPONDENTS

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QUESTION PRESENTED

Amicus curiae addresses the following question only:

Whether the first-sale doctrine grants the purchaser of a patented article the right to make, use, and sell an unlimited number of the patented invention that have never been sold.

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INTERESTS OF *AMICUS CURIAE*

The Washington Legal Foundation (WLF) is a public interest law and policy center with supporters in all 50 States. WLF devotes a substantial portion of its resources to defending free enterprise, individual rights, and a limited and accountable government.[1]

To that end, WLF has regularly appeared before this Court and other federal courts in cases raising important issues regarding the scope and enforceability of patents. *See, e.g., Eli Lilly and Co. v. Sun Pharmaceutical Industries, Ltd.*, 611 F.3d 1381 (Fed. Cir. 2010), *cert. denied*, 131 S. Ct. 2445 (2011) (double patenting doctrine); *Therasense Inc. v. Becton, Dickinson and Co.*, 649 F.33d 1276 (Fed. Cir. 2011) (inequitable conduct doctrine); *Orion IP v. Honda Motor America*, 605 F.3d 967 (Fed. Cir. 2010) (anticipation by prior art).

The nation's farmers have experienced tremendous advances in seed technology in recent years, thanks in large measure to major expenditures for research and development in this area by Respondent Monsanto Co. and others. WLF is concerned that the extremely broad interpretation of the patent exhaustion doctrine espoused by Petitioner would, if accepted by the Court, throw into question the nation's ability to sustain those advances. That doctrine has never previously been understood to

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[1] Pursuant to Supreme Court Rule 37.6, WLF states that no counsel for a party authored this brief in whole or in part; and that no person or entity, other than WLF and its counsel, made a monetary contribution intended to fund the preparation and submission of this brief. All parties have consented to the filing of this brief; letters of consent have been lodged with the clerk.

permit purchasers of a patented product to "use" the product to create an entirely new product on the template of the original.

WLF is submitting this brief to focus on the history of the patent exhaustion doctrine and to explain why the rationale for that doctrine is inapplicable to the facts of this case. WLF does not address issues related to the "conditional sales" doctrine, a doctrine not relied on by the Federal Circuit in issuing its decision and which this Court need not address in resolving the case.

WLF is also submitting this brief to respond to allegations by Petitioner and some supporting *amici* that the technology developed by Monsanto has been bad for the environment. Those environmental arguments are not directly relevant to the Questions Presented in this case. But rather than allow these inaccurate environmental charges to color the Court's perception of the case, WLF briefly responds to the allegations.

STATEMENT OF THE CASE

Petitioner Vernon Bowman is an Indiana farmer who since 1999 has purchased soybean seeds from a seed producer licensed by Respondents Monsanto Co., *et al.* (collectively "Monsanto"). Monsanto has developed a patented technology that enables crops grown from those seeds to tolerate glyphosate, a widely

used agricultural herbicide.[2] In order to purchase those seeds, Bowman was required to sign a Technology Agreement, acknowledging that Monsanto's technology was protected under U.S. patent law and agreeing not to replant harvested Roundup Ready® soybeans. Each spring, Bowman planted the licensed seeds (as the Agreement authorized him to do), and there is no evidence that he ever replanted soybeans grown from the seeds.

At issue here are soybeans grown by Bowman as a late-season "second crop." In a highly unusual procedure, Bowman obtained the seeds for his second crop by purchasing commodity seeds from a local grain elevator. Bowman suspected that many of those seeds carried the Roundup Ready® trait. His suspicion proved accurate when he applied glyphosate to the second crop and most of the soybeans survived. He saved seeds from this second-crop harvest and thereafter used the saved seeds to plant each year's second-crop soybeans.[3] By then he was aware that all of these seeds carried the Roundup Ready trait, and he was thus able to apply glyphosate to each year's crop.

The result was that Bowman grew second-crop soybeans that he knew contained Monsanto's patented glyphosate-tolerant genetic trait, and he did so without

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[2] Monsanto manufactures glyphosate under the trademark Round-Up ®. Soybeans to which the glyphosate-tolerant genetic trait has been added are known as Round-Up Ready® soybeans.

[3] Bowman occasionally supplemented his second-crop seed supply by purchasing additional commodity seeds from the local grain elevator.

Monsanto's authorization and without paying a royalty. When Monsanto discovered Bowman's activity, it filed suit for patent infringement.

The trial court rejected Bowman's argument that the doctrine of patent exhaustion barred enforcement of Monsanto's patents. It granted Monsanto's motion for summary judgment, ruling that Bowman had infringed the patents.

The Federal Circuit affirmed. Pet. App. 1a-18a. The appeals court held that patent exhaustion did not bar Monsanto's infringement claim. *Id.* at 10a. It deemed irrelevant Bowman's claim that Monsanto's patent rights in the commodity seeds purchased by Bowman were exhausted. Even if that claim were accurate, the court concluded, Bowman infringed the patent by growing a new generation of Roundup Ready® soybeans without obtaining a license from Monsanto to do so. *Id.* The court explained:

> The fact that the patented technology can replicate itself does not give a purchaser the right to use replicated copies of the technology. Applying the first sale doctrine to subsequent generations of self-replicating technology would eviscerate the rights of the patent holder. The right to use does not include the right to construct an essentially new article on the template of the original, for the right to make the article remains with the patentee.

Id. (citations omitted). The appeals court said that Bowman was free to use his commodity seed as animal feed "or for any other conceivable use" other than for

the purpose of growing new Roundup Ready® soybeans. *Id.*

SUMMARY OF ARGUMENT

Federal law grants patent holders the "right to exclude others from making, using, offering for sale, or selling the invention." 35 U.S.C. § 154(a)(1). Monsanto never authorized Bowman to "mak[e]" Roundup Ready® soybeans from the commodity seeds he purchased from the local grain elevator, but Bowman nonetheless knowingly did so. Accordingly, he infringed Monsanto's patents, and the lower courts properly awarded damages.

Bowman contends that under the doctrine of patent exhaustion, Monsanto retained no patent rights in the commodity seed that he purchased from the grain elevator. If so, Bowman was free to use the commodity seed as he saw fit; for example, he could have used it as animal feed. But his right to use the commodity seed did not encompass the right to make a brand new soybean plant containing the glyphosate-tolerant genetic trait protected by Monsanto's patents. Federal courts have long imposed strict limitations on the rights of the purchaser of a patented invention to use that product to make brand new copies of the invention. In the absence of such a limitation, patentees would quickly lose the ability to profit from their inventions.

The history of the patent exhaustion doctrine demonstrates that it was never intended to apply in the manner espoused by Bowman. Bowman suggests that the doctrine arose from an aversion to limitations on

private property rights, that once an individual gained title to property courts were reluctant to allow a seller – even one holding a patent on the item sold – to interfere with the buyer's right to do as he wished with his own property. Pet. Br. 42-44. This Court's case law suggests otherwise. The exhaustion doctrine was born of a desire to promote efficiency in economic transactions. The courts concluded that the greatest efficiency could be achieved if, in general, patentees were required to be paid their entire royalty (*i.e.*, the value added to the product by virtue of the patentee's monopoly rights) at the time of first sale.

Any other rule would be inefficient, the courts concluded, because (among other things): (1) subsequent buyers would have difficulty knowing for certain the extent of the patentee's continued claim to the property and thus would be less willing to purchase; and (2) the absence of a first sale rule would create uncertainty even between the contracting parties regarding the patentee's continuing rights.

The efficiency-enhancing explanation for the patent exhaustion doctrine undercuts Bowman's position that a purchaser's unrestricted right to "use" his property free from patent restrictions includes the right to fashion a new patented product from the existing one. The exhaustion doctrine assumes that in an efficient market, the patentee on average will receive a fair royalty – no more and no less – each time one of his patented products is placed into the stream of commerce. That assumption cannot be squared with Bowman's contention, because if (as he contends) the purchaser of a single Roundup Ready® soybean seed can parlay that seed into a thousand new seeds, the

commercial use of those thousand seeds will generate only one royalty for Monsanto.

Bowman objects to the Federal Circuit's reliance on case law that prohibits a purchaser from constructing essentially new items on the template of the original. Pet. Br. 38 ("Bowman's use of commodity seeds for planting has nothing in common with 'reconstruction.' No parts were worn out and replaced; the seeds were simply used."). That objection is without merit. The Court has long cautioned that the purchase of a patented product carries with it the right to use the product *only so long as it is capable of use*. Bowman's assertion that "no parts were worn out" undercuts his position. Had individual parts of his seeds been worn out, he would have been permitted to repair those parts in order to extend the useful life of the seeds. But that right to repair has never been deemed to include the right to make an entirely new product. There is no plausible argument that the second-crop glyphosate-tolerant soybeans grown by Bowman were simply repaired versions of the commodity seed that he purchased from the grain elevator.

Several of Bowman's *amici* have largely ignored patent exhaustion case law and instead have focused on alleged environmental harms that supposedly flow from use of Roundup Ready® crops. *See, e.g.*, Brief for Amici Curiae Center for Food Safety and Save Our Seed ("CFS Br.) at 2-25. Those allegations are not well-founded. Their claim that Roundup Ready® technology has led to an increase in "overall pesticide use," CFS Br. at 4, is false; pesticide usage has been declining. Many attribute the decline to the increased

use of Roundup Ready® crops, which in turn permits substitution of Roundup® for less efficient herbicides that needed to be applied in greater quantities. Use of Roundup Ready® crops is also associated with decreased soil tillage. That trend is applauded by environmentalists; tillage causes soil erosion and can endanger water quality.

Contrary to CFS's contention, transgenic crops produce higher yields than traditional crops. The higher yield derives from their glyphosate tolerance, a trait that permits better weed control and thus reduced crop damage caused by weeds. Although CFS decries increased expenditures for resisting weeds that have begun to develop resistance to glyphosate, it ignores the significant increase in net farm income associated with Roundup Ready® technology.

ARGUMENT

I. THE PATENT EXHAUSTION DOCTRINE DID NOT GRANT BOWMAN, BY VIRTUE OF HIS COMMODITY SEED PURCHASES, THE RIGHT TO MAKE AN UNLIMITED NUMBER OF NEW COPIES OF THE PATENTED INVENTION

Beginning in 1999, Bowman regularly grew soybean crops that he well knew exhibited Monsanto's patented glyphosate-tolerant genetic trait. He asserts that the patent exhaustion doctrine prevents Monsanto from charging him with infringement. That assertion misconceives the exhaustion doctrine, which grants the a purchaser of a patented product the right to use *that product* free from patent law restrictions, not an

unbounded right to make and sell new copies of the product.

Bowman contends that the commodity seed he purchased from the local grain elevator was sold to him without any of Monsanto's patent restrictions. If so, he was entitled to *use* the seed as he saw fit. But nothing in the patent exhaustion doctrine granted Bowman the right to *make* brand new Roundup Ready® soybeans.

A. The Patent Exhaustion Doctrine Developed as a Means of Promoting Economic Efficiency, Not to Protect the Property Rights of Purchasers

Understanding why the patent exhaustion doctrine does not protect a purchaser's right to "use" his purchased goods to make or grow duplicate products requires an examination of the development of that doctrine over the past 150 years.

As the Court recently explained, "The longstanding doctrine of patent exhaustion provides that the initial authorized sale of a patented item terminates all patent rights to that item." *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617, 625 (2008). After an authorized sale has occurred, the Court has invoked the doctrine to hold that a patentee may not rely on patent law to restrict, *inter alia*, the locations at which the patented item may be used, *Adams v. Burke*, 84 U.S. 453 (1873); the price at which it may be sold, *Bauer & Cie v. O'Donnell*, 229 U.S. 1 (1913); and the method by which it may be operated. *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917). The patentee is entitled to

negotiate a contract with the purchaser for the purpose of limiting the manner in which the purchaser may use the item, but enforcement of any such agreement must be through contract law, not patent law. *Id.* at 514. Moreover, if the purchaser resells the item, the patentee will likely be unable to enforce the contract with the new owner, with whom he lacks privity.

Bowman suggests that the patent exhaustion doctrine is a byproduct of a desire by courts to protect the property rights of the purchaser of a patented item. Pet. Br. 43 ("In essence, exhaustion arises from any lawful title transfer. . . . That title vests in someone other than the seed seller amounts to exhaustion of patent rights in progeny seeds."); *id.* at 44 ("Farmers such as Bowman who choose to plant commodity grain for their second crop lawfully own the next-generation seeds. . . . And because title in seed that farmers grow vests with those farmers, exhaustion logically extends to those seeds as well."). But that theory does not explain why courts permit patentees to resort to contract law for the purpose of continuing to exert dominion over patented items that they have sold. Nor does it explain why patent law permits patentees to exert dominion over a patented item that was never the subject of an authorized sale, even though title to the item is lodged firmly with the alleged infringer. *See, e.g., Mitchell v. Hawley*, 83 U.S. 544 (1873).

The exhaustion doctrine began as an effort by the courts to determine the intent of the parties to a sales contract between a patentee and the purchaser of a patented item. In *Bloomer v. McQuewan*, 55 U.S. 539 (1853), the 1833 sales contract for a planing machine did not specify what the effect on the purchaser's rights

would be if the patent term (then scheduled to expire in 1849) were extended. Congress did, in fact, later extend the patent term by seven years, to 1856. Noting that patentees' rights under federal patent law were no greater after 1849 than they had been before 1849 with respect to sold items, the Court looked solely to contract law to determine whether the purchaser's rights to use the machine remained in force during the patent-extension period. 55 U.S. at 549-50. The Court concluded that the parties must have assumed at the time of the 1833 contract signing that the purchaser would be permitted to continue to use the machine for as long as it lasted. *Id.* at 550-51. The Court held, "[U]nder the general law [*i.e.*, the federal common law of contracts], in force when the special act of Congress was passed [in 1845], a party who had purchased the right to use a planing machine during the period to which the patent was first limited, was entitled to use it during the extension authorized by that law." *Id.* at 550.

The Court later concluded that *Bloomer v. McQuewan* had established a patent exhaustion doctrine, whereby a patented item's initial authorized sale terminates all patent rights to that item, not simply (as in *McQuewan*) an alleged patent right to rescind a previously granted license to use a patented item.[4] Thus, in *Adams*, the Court held that a patentee could not invoke the patent law to prevent a purchaser of a patented coffin lid (who was not in privity of

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[4] The patentee in *McQuewan* had argued that the 1845 congressional statute had granted him just such a right of rescission. *Id.* at 551-54.

contract with the patentee) from using the lid wherever he chose. The Court explained:

> But in the essential nature of things, when the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use. The article, in the language of the court, passes without the limit of the monopoly. That is to say, the patentee or his assignee having in the act of sale received all the royalty or consideration which he claims for the use of his invention in that particular machine or instrument, it is open to the use of the purchaser without further restriction on account of the monopoly of the patentees.

84 U.S. at 456 (citing *McQuewan*).

Adams nonetheless made clear that a purchaser's right to make use of patented technology did not continue indefinitely. Rather, it continued only "so long as [the purchased machine] was capable of use." *Id.* at 455.

The Court more fully explained the rationale for the patent exhaustion rule 22 years later, in *Keeler v. Standard Folding Bed Co.*, 157 U.S. 659 (1895). In concluding that "one who buys patented articles of manufacture from one authorized to sell them becomes possessed of an absolute property in such articles, unrestricted in time or place," the Court explained that its rule was justified by a need to avoid "[t]he inconvenience and annoyance to the public that an

opposite conclusion would occasion." *Keeler*, 157 U.S. at 666-67. The Court emphasized that its rule was *not* based on solicitude for the property rights of purchasers, noting that a patentee was free to turn to contract law if he desired to restrict the purchaser's future use of the product being sold. *Id.* at 666.

An examination of the facts in *Keeler* illustrates the sort of "inconvenience and annoyance to the public" that the Court believed that the patent exhaustion doctrine would prevent. The plaintiff in *Keeler* held an exclusive license to sell patented bedsteads in Massachusetts. The defendants purchased identical patented bedsteads in Michigan from the Michigan licensee, then began reselling them in Massachusetts. The Court held that the patent exhaustion doctrine barred the plaintiff from using the patent laws to prevent the defendants from selling in Massachusetts, even though the defendants knew that the company from which they purchased the bedsteads was only licensed to make sales in Michigan. *Id.* To illustrate the knotty legal issues that would arise—and thereby would inhibit the free flow of commerce—if the patent law did *not* assume that a purchaser of a patented item was free to use and sell his property wherever he chose, the Court set forth a series of hypothetical cases:

> Suppose, however, the patentee has exercised his statutory rights of assigning by conveying to another an exclusive right under the patent to a specified part of the United States. What are the rights of a purchaser of patented articles from the patentee himself within the territory reserved to him? Does he thereby obtain an absolute property in the article, so that he can

> use and vend it in all parts of the United States, or, if he take the article into the assigned territory, must he again pay for the privilege of using and selling it? If, as is often the case, the patentee has divided the territory of the United States into 20 or more 'specified parts,' must a person who has bought and paid for the patented article in one part, from the vendor having an exclusive right to make and vend therein, on removing from one part of the country to another, pay to the local assignee for the privilege of using and selling his property, or else be subjected to an action for damages as a wrongdoer? And is there any solid distinction to be made, in such a case, between the right to use and the right to sell? Can the owner of the patented article hold and deal with it the same as in case of any other description of property belonging to him, and, on his death, does it pass, with the rest of his personal estate, to his legal representatives, and thus, as part of the assets to be administered, become liable to be sold?

Id. at 661-62. Having identified these "inconvenience[s] and annoyance[s] to the public" that would arise in the absence of patent exhaustion doctrine, the Court deemed the doctrine an appropriate means of avoiding them. The Court further explained that the doctrine does not unfairly penalize patentees by depriving them of royalty rights: "The conclusion reached does not deprive a patentee of his just rights, because no article can be unfettered from the claim of his monopoly without paying its tribute." *Id.* at 666-67.

The Court provided a further explanation of the

rationale underlying the patent exhaustion doctrine in *Motion Picture Patents*. In that case, the patentee sought to invoke the patent laws to control post-sale uses of its patent motion picture projectors, even uses by purchasers with whom it was not in privity. Among other things, the patentee sought to require purchasers to display only those films produced by the patentee. It went so far as to require that all projectors display a plate (whose removal would eliminate the license to use the projector at all) explaining the full extent of the patentee's rights, including the right to impose additional license terms during the life of the patent. In affirming a decision that invoked the patent exhaustion doctrine to deny an injunction against violation of the license terms, the Court made clear that it deemed tie-in arrangements of this sort to constitute unauthorized restraints on trade. 243 U.S. at 513. The Court said that the "fair as well as the statutory measure of [the patentee] reward for his contribution to the public stock of knowledge" was the funds derived from the sale of "the right to an exclusive use of the new and useful discovery which has been made." *Id.* It viewed the tie-in arrangement as an effort by the patentee to derive an unwarranted profit from the same of items not covered by the patent. *Id.* at 515.

In further support of the patent exhaustion doctrine, the Court also repeated the inconvenience/annoyance rationale articulated in *Keeler*: "The patent law furnishes no warrant for such a practice [of using the patent law to restrict post-sale use of patented items in order to derive a monopoly profit from unpatented items], and the cost, inconvenience, and annoyance to the public which the opposite conclusion

would occasion forbid it." *Id.* at 516.

To sum up, case law indicates that the patent exhaustion doctrine developed as a means of promoting efficiency in economic transactions and of preventing the patentee from imposing unreasonable restraints on trade as a means of deriving a profit in excess of what his invention warrants. It was never intended to protect purchasers, once they acquire title to a patented item, against all incursions on their "right" to do with as they please with their property.

Understood in that light, the patent exhaustion doctrine is inapplicable to this case. It would be applicable only if, as Bowman contends, his naked title to the commodity seeds (and to the infinite generation of soybeans seeds that might follow) were sufficient to permit him to do whatever he desires with his property. But simply because Bowman held title to the second-planting soybeans does not mean that the patent exhaustion doctrine gave him the unlimited right to make, sell, and use those soybeans. The patent exhaustion doctrine has always presupposed a "first sale" of some sort, and Monsanto never sold Bowman any rights with respect to the second-planting soybeans.

Moreover, the rationale for the patent exhaustion doctrine, as explained in *Keeler* and *Motion Picture Patents*, has no application to Bowman's claims. Patent-related restrictions on use of property to which one holds title can cause serious "inconvenience" and "annoyance" to the public when the extent of those restrictions cannot be clearly delineated. Unclarity may exist when the law permits such products to be

"used" for some purposes but not others. But the line being drawn here—Bowman may "use" commodity seed even though it may be Roundup Ready®, but he may not "make" new Roundup Ready® soybeans – is easily understood. Moreover, as Monsanto has demonstrated, affirming the judgment below will result in its receipt of only a single royalty for each Roundup Ready® soybean that is made/grown by farmers.

B. The Court's Repair/Reconstruction Case Law Supports the Decision Below

In support of its decision, the Federal Circuit relied on case law that prohibits a purchaser from constructing a new patented item by using the original:

> The right to use "do[es] not include the right to construct an essentially new article on the template of the original, for the right to make the article remains with the patentee.

Pet. App. 14a (quoting *Jazz Photo Corp. v. Int'l Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001).

Bowman objects to the reliance on cases that permit the purchaser of a patented item to "repair" the item but not to "reconstruct" it. He asserts, "Bowman's use of commodity seeds for planting has nothing in common with 'reconstruction.' No parts were worn out and replaced; the seeds were simply used." Pet. App. 38a.

That objection is without merit. The Court has long cautioned that the purchase of a patented product

carries with it the right to use the product *only so long as it is capable of use*. *See, e.g., Adams*, 84 U.S. at 455; *Keeler*, 157 U.S. at 663; *Aro Mfr. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 346 (1961).

Bowman's assertion that "no parts were worn out" undercuts his position. Had individual parts of his seeds been worn out, he would have been permitted to repair those parts in order to extend the useful life of the seeds. *Id.* But the right to repair has never been deemed to include the right to make an entirely new product. WLF recognizes that there are many close cases, where the line between repair and reconstruction is not easily drawn; but this is not a close case. There is no plausible argument that the second-crop glyphosate-tolerant soybeans grown by Bowman were simply repaired versions of the commodity seed that he purchased from the grain elevator.

Bowman's careful cultivation of second-crop soybeans constituted the "making" of a product that is protected by Monsanto's patents. In the absence of permission from Monsanto to engage in such conduct, the Federal Circuit properly concluded that Bowman violated 35 U.S.C. § 154(a)(1).

II. ROUNDUP READY® CROPS HAVE BEEN SHOWN TO PROVIDE NUMEROUS ENVIRONMENTAL BENEFITS

Several of Bowman's *amici* have largely ignored patent exhaustion case law and instead have focused on alleged environmental harms that supposedly flow from use of Roundup Ready® crops. *See, e.g.*, Brief for Amici Curiae Center for Food Safety and Save Our

Seed ("CFS Br.) at 2-25. Those allegations are not well-founded.

By enabling farmers to use glyphosate rather than other herbicides, Roundup Ready® technology offers several economic and environmental benefits. Roundup Ready® technology has replaced more toxic pesticides, enabled farming practices that promote conservation, bolstered yield protection, and boosted farmers' incomes. In its *amicus* brief, CFS repeatedly overstates environmental concerns, and downplays the positive effects of agricultural bioengineering. Though CFS has concerns over herbicide use and agricultural biotechnology in principle, it neglects to mention that in the absence of glyphosate and Roundup Ready® technology, farmers would be using more dangerous herbicides and more environmentally harmful farming practices.

A. Decreased Use of More Toxic Pesticides

Contrary to CFS's allegation that Roundup Ready® technology has led to an increase in "overall pesticide use," CFS Br. 4, EPA figures indicate that overall pesticide use declined between 1997 and 2007.[5] A USDA attributes this decline in pesticide use to the

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[5] *Compare* EPA, *1996-1997 Pesticide Market Estimates*, *available at* http://www.epa.gov/opp00001/pestsales/97pestsales/overview1997.htm (last visited Jan. 17, 2013) *with* EPA, *2006-2007 Pesticide Market Estimates*, *available at* http://www.epa.gov/opp00001/pestsales/07pestsales/usage2007.htm#3_1(last visited Jan. 17, 2013).

rise of genetically engineered soybeans.[6] Roundup® is more effective than its predecessor herbicides, meaning that less Roundup® is required relative to other herbicides to protect one's crops from weeds. Additionally, Roundup® is non-selective, meaning it is capable of killing a wide variety of plants. As a result, it can be used in lieu of several targeted herbicides. Before use of Roundup® became an option, growers were forced to administer (and then monitor) combinations of several herbicides. The creation of Roundup Ready® seeds has allowed farmers to replace this costly, dangerous, and time-consuming practice with the use of Roundup®. EPA and USDA data, as well as Roundup®'s effectiveness and ability to control a wide spectrum of weeds, contradict CFS's claim that Roundup Ready seeds have led to greater pesticide use.

As CFS notes, use of glyphosate has increased. But given that glyphosate is considered less toxic and more environmentally friendly than other herbicides,[7]

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[6] Economic Research Service/USDA, *Adoption of Bioengineered Crops*, ERS Agricultural Economic Report No.AER-810, at 26 (2002), *available at* http://www.ers.usda.gov/media/759233/aer810h_1_.pdf (last visited Jan. 17, 2013).

[7] The USDA has concluded, "Glyphosate has a half-life in the environment of 47 days, compared with 60-90 days for the herbicides it commonly replaces. The herbicides that glyphosate replaces are 3.4 to 16.8 times more toxic, according to a chronic risk indicated based on the EPA reference dose for humans." Economic Research Service/USDA, at 28. The EPA has deemed glyphosate "of relatively low oral and dermal acute toxicity," and categorized the herbicide in Toxicity Category III (on a scale of I to IV, IV being the least dangerous.) It is not considered carcinogenic. EPA conducted a "worst-case scenario" study and concluded that human dietary exposure and risk are minimal. *See* EPA, *Glyphosate*, R.E.D. Facts

its increased use is an environmental benefit. Glyphosate breaks down rapidly in the environment, and its adsorptive nature makes it unlikely to migrate to ground water. Unlike other herbicides, glyphosate kills weeds without substantially harming exposed animals, the soil, or water quality.

Roundup Ready® crops are also associated with decreased tillage. A 2009 study showed that use of Roundup Ready® seeds led to a 23% increase in conservation tillage practices,[8] while another confirmed that "[t]illage trips decrease, percent of soybean acres in no-till systems increase, and the value of time saved in tillage activities increases as farmers shift from traditional to [Roundup Ready®] soybeans."[9] Tillage causes soil erosion, requires more labor, demands higher fuel costs and energy use, and endangers water quality by increasing the risk of surface water pollution.

(Sept. 1993), *available at* http://www.epa.gov/oppsrrd1/REDs/factsheets/0178fact.pdf (last visited Jan. 17, 2013).

[8] Wade A. Givens, David R. Shaw, Greg R. Kruger, et al., *Survey of Tillage Trends Following the Adoption of Glyphosate-Resistant Crops*, 23 WEED TECHNOLOGY at 152 Jan.-Mar. (2009).

[9] Michele C. Marra, Nicholas E. Piggott, & Gerald A. Carlson, *The Net Benefits, Including Convenience, of Roundup Ready Soybeans: Results From a National Survey*, at 17 (Sept. 2004), *available at* http://www.docstoc.com/docs/34733342/THE-NET-BENEFITS-INCLUDING-CONVENIENCE-OF-ROUNDUP (last visited Jan. 17, 2013).

B. Transgenic Crops Have Higher Yields

Transgenic crops have higher yields than their non-genetically modified counterparts.[10] CFS obscures this fact by repeatedly stating that the sole reason that genetically engineered crops have been engineered is to increase herbicide resistance. CFS Br. at 3. But seeds need not be engineered for the purpose of increasing yields to achieve the same result. Indeed, several studies point to evidence that agricultural biotechnology increases yields and, as a result, lowers food prices.[11] Roundup Ready® technology improves yields by reducing crops' susceptibility to herbicides, which in turn combats crop destroying weeds. Thus, the technology increases overall yields by reducing the amount of damage caused by weeds.

The purpose of the CFS's attack is to disparage the motives behind agricultural biotechnology. According to CFS, Monsanto's "favorite myth about their product is that they are needed in order to 'feed the world.'" CFS Br. at 8. But yield is not determinative of whether Roundup Ready crops have ameliorated hunger or had an effect on food supply. As a National Research Council study has recognized, "[Herbicide resistant] crops have not substantially increased yields, but their use has facilitated more cost-

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[10] Steven Sexton & David Zilberman, *How Agricultural Biotechnology Boosts Food Supply and Accommodates Biofuels*, National Bureau of Economic Research at 9 (January 2011).

[11] *See id.*

effective weed control[.]"[12] In places without such technology, costlier and more ineffective means of combating weeds prevail.

C. Roundup Ready® Crops Have Increased Farmers' Incomes

Roundup Ready® technology has not only encouraged farmers to adopt environmentally-friendly farming practices, but also has led to increased farm income. Roundup Ready® crops have reduced production costs and enabled more efficient weeding practices.[13] Due to glyphosate's non-selective nature, farmers have reduced costs by ceasing to apply and monitor toxic combinations of herbicides to control different varieties of weeds. Conservation tillage techniques have further lowered production costs. While agricultural biotechnology has had a positive impact on incomes in many farming sectors, the largest gains have been seen in soybeans, where herbicide resistance generated $4.14 billion in added income in 2004, or an additional 9.5% to the value of the crop.[14]

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[12] National Research Council, *Impact of Genetically Engineered Crops on Farm Sustainability in the United States* 9 (National Academies Press 2010).

[13] *See* Terrance M. Hurley, Paul D. Mitchell, & George B. Frisvold, *Effects of Weed Resistance Concerns and Resistance Management Practices on the Value of Roundup Ready Crops*, 12 AGBIOFORUM 3&4 (2010).

[14] Graham Brookes & Peter Barfoot, *GM Crops: The Global Economic and Environmental Impact-The First Nine Years 1996-2004*, 8 AgBioForum 2&3 (2005).

CFS alleges that use of Roundup® leads to weed resistance, and weed resistance in turn leads to higher costs. But CFS ignores the significant improvements in efficiency offered by Roundup® and Roundup Ready® crops. One estimate places the savings from use of Roundup Ready® seeds—due to decreased labor and herbicide costs and reduced tillage—at up to $37 per acre.[15] Another major study confirms those savings estimates.[16]

CONCLUSION

Amici curiae request that the Court affirm the judgment of the court of appeals.

Respectfully submitted,

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[15] Marra, *supra*, at 2.

[16] *See* Hurley, *supra*.

AMICUS CURIAE BRIEF

RECORD
AND
BRIEFS

SUPREME COURT, U.S.
FILED
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No. 11-796

In The
Supreme Court of the United States

VERNON HUGH BOWMAN,

Petitioner,

v.

MONSANTO COMPANY, *ET AL.*

Respondents.

On Writ of Certiorari to the United States Court of Appeals For the Federal Circuit

BRIEF OF *AMICI CURIAE* WISCONSIN ALUMNI RESEARCH FOUNDATION *ET AL.* IN SUPPORT OF AFFIRMING THE FEDERAL CIRCUIT

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STATEMENT OF INTEREST

This brief is submitted by *amici* to urge this Court to affirm the decision of the Federal Circuit below.[1]

Amici are universities, entities affiliated with universities, the nation's higher education associations, and entities involved in university technology management. *Amici*, *amici's* members, or *amici's* employers engage in and support scientific research, obtain patents on inventions arising from that research, license the technologies to private sector companies for commercialization and then use portions of licensing royalties to underwrite further academic research and education.

The non-profit research community carries out much of its research under the University and Small Business Patent Procedures Act, commonly known as the Bayh-Dole Act. The issues raised in this case are of interest to the university and non-profit research community because of the negative impact reversal would have on the technology transfer function practiced primarily under the auspices of the Bayh-Dole Act by some 300 such entities, including *amici*.

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[1] Counsel for all parties have consented to the filing of *amicus* briefs, *see* Supreme Court Rule 37.3(a), and copies of the letters of general consent have been filed with the Clerk. Pursuant to Supreme Court Rule 37.6, *amici* state that this brief was not authored, in whole or in part, by counsel to a party, and that no monetary contribution to the preparation or submission of this brief was made by any person or entity other than *amici* or their counsel.

SUMMARY OF ARGUMENT

Technology transfer organizations working under the auspices of the Bayh-Dole Act ("the Act") have been successful in bringing numerous beneficial technologies to the public. By enabling research institutions to seek patent protection for federally funded inventions, the Act has led to a substantial increase in public disclosure and availability of these inventions. Technology transfer licensing has also created jobs and positively impacted the domestic economy.

The technology transfer framework has facilitated the development of numerous artificial, progenitive technologies that benefit the public. Such technologies are human-made and involve a "parent" combination, substance, or manufacture that can be used to generate progeny having the same genetic makeup or characteristics as the parent. These technologies positively impact areas such as cancer research, agricultural crop protection, and nutritional science.

Reversing the Federal Circuit would impair technology transfer operations and ultimately deny the public the benefits of existing and yet-unknown artificial, progenitive technologies. The first buyers of artificial, progenitive technology could make an unlimited number of identical copies of the invention without having to compensate the patentee for those subsequent copies. In a short period of time, the market for the technology would become saturated with copies. The patent owner and its licensees would effectively lose the right to exclude others from

practicing the patented technology over the full statutory term of the patent—which is a fundamental right conferred by the patent system. This would devalue existing patents directed to artificial, progenitive technologies and remove any incentive for private sector entities to license and develop future technologies of this kind. Ultimately, the public may never benefit from such inventions.

To ensure that the public continues to benefit from research brought to market under the technology transfer framework, this Court should affirm the Federal Circuit's holding that Bowman infringed Monsanto's patents by "making" new seeds under 35 U.S.C. § 271(a). Here, although Bowman was authorized to "use" the seeds that he purchased from an authorized seed dealer once for planting, he was not authorized to plant subsequent generations of seeds for the purpose of "making" even more generations of seeds containing the patented trait. The language of the Plant Variety Protection Act ("PVPA")—which does not apply in this case—underscores the legitimacy of the concept that seeds can be "used" to "make" subsequent generations of seeds.

Under its exhaustion jurisprudence, this Court has always recognized a distinction between "permissible" and "impermissible" uses. In particular, even authorized purchasers of a patented article cannot "use" that article to "make" additional copies of the same. This distinction is most apparent in the Court's repair/reconstruction cases. The Court need not determine the outer bounds of the term

"making" as used in the patent statute to affirm the Federal Circuit. Under any definition, Bowman certainly "made" infringing seeds in this case, even though he grew them rather than genetically engineering them from starting materials.

Finally, concerns about "innocent infringement" have no place here. The Court has never considered intent to be a relevant factor in its exhaustion jurisprudence. Furthermore, this case presents nothing more than the same "innocent infringement" concerns as any other patent infringement case, owing to the strict liability nature of this offense. Crucially, Bowman was not an "innocent infringer." He devised a calculated scheme to buy and plant commodity seeds without compensating Monsanto for its patented invention, knowing that the seeds likely contained the patented trait.

BACKGROUND

Technology transfer and the Bayh-Dole Act promote development of new technology.

The Bayh-Dole Act ("the Act"), *see* 35 U.S.C. §§ 200–212, and technology transfer organizations help many technologies invented with support from federal funding reach the public. Before the Act was passed in 1980, inventions that arose from federally funded research were owned by the federal government, and "only 5 percent of patents owned by the Federal Government were used by the private sector—[such] that . . . the American people [were] denied the benefits of further development, disclosure, exploitation, and commercialization of the Government's patent portfolio." H.R. Con. Res. 319, 109th Cong. (2006). There was no uniform statutory authority for federal agencies to grant exclusive licenses for their patents. Indeed, more than 25 different patent licensing policies existed among various federal agencies. As a result, efforts to commercialize patents held by the federal government were frequently unsuccessful and the public did not benefit from access to these inventions.

Congress passed the Act in response to this problem. The Act promotes utilization of the patent system and collaboration between research institutions and private sector entities to carry new technology from conception to commercialization. *See* 35 U.S.C. § 200; *see also Bd. of Trs. of Leland Stanford Junior Univ. v. Roche Molecular Sys., Inc.*, 131 S. Ct. 2188, 2192–93, 2201 (2011). Numerous institutions have established technology transfer

offices to facilitate collaboration with private entities.[2]

This collaboration typically begins with the federal government providing funding to research institutions, such as universities, to support exploration of new and promising technology.[3] The institution's technology transfer office secures patent protection for the newly-conceived technology. The technology transfer office then seeks a private sector licensing partner, such as a faculty start-up company or an established corporation, to help develop the new technology into a commercial product for public use.

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[2] These technology transfer offices were established without any independent appropriations from the federal government. *See* Wendy H. Schacht, *The Bayh-Dole Act: Selected Issues in Patent Policy and the Commercialization of Technology*, Congressional Research Service 24 (2012).

[3] The academic sector drives research and innovation in the United States. In 2009, academic institutions performed over half (53%) of all basic research in the United States, 36% of all U.S. research (basic and applied) and 14% of total U.S. research and development. *See* Nat'l Science Bd., *Science and Engineering Indicators 2012* 5-4 (2012), http://nsf.gov/statistics/seind12/pdf/seind12.pdf. In 2011, universities spent $65.1 billion for research. *See* Doug Lederman, *Research Spending, Before the Cliff*, Inside Higher Ed (Nov. 29, 2012, 3:00 AM), http://www.insidehighered.com/news/2012/11/29/spending-academic-research-rose-69-2011. Nearly two-thirds of all money spent by 912 academic institutions surveyed by the National Science Foundation came from the federal government. *See id.* The next-highest portion came from the institutions themselves ($12.4 billion). *See id.* More than half of these expenditures were in life sciences ($37.2 billion, or 57%). *See id.*

The partnership between research institutions and private sector entities plays a critical role in this process. The expertise of private sector entities in product development, market testing, and commercialization is essential to ensure that the new technology reaches the public in a beneficial form. However, these steps can be quite costly. Indeed, "[s]tudies have shown that for every dollar of government-sponsored research, up to $10,000 is required to fully develop, commercialize, and realize a useful product." Recent Development, *Columbia, Co-transformation, Commercialization & Controversy The Axel Patent Litigation*, 17 Harv. J.L. & Tech. 583, 608 (2004). Private sector entities will incur these costs only if they are properly incented to do so. Patents, and the valuable exclusionary rights they confer, provide the necessary incentive.

Empirical evidence demonstrates that the Bayh-Dole Act greatly benefits the public.

Before the Act was passed in 1980, universities rarely acquired patent protection for inventions created as a result of federally funded research. In 1979, U.S. universities obtained only 264 patents. *See* Risa L. Lieberwitz, *Faculty In The Corporate University: Professional Identity, Law And Collective Action*, 16 Cornell J.L. & Pub. Pol'y 263, 301 n.134 (2007). But from 2002-2011, university researchers submitted more than 185,000 invention disclosures, resulting in more than 163,000 patent applications and more than 37,000 issued

patents. *See* Ass'n of Univ. Tech. Managers, U.S. Licensing Activity Survey: FY2011 21, 23 (2012) ("AUTM Survey"). Because public disclosure is part of the "*quid pro quo*" of obtaining a patent, *see J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 142 (2001) (internal quotation marks omitted), this increase in patenting activity results in public disclosure of federally funded inventions.

Significantly, "product sales of licensed technologies from [technology transfer offices] have a substantial impact on the U.S. economy." AUTM Survey at 39. The Act "has ushered in [an] unprecedented era of commercializing inventions developed on university campuses which has spurred job creation, new products in the marketplace and investment in new companies." David Kappos, *Remarks As Prepared, 30th Anniversary of the Bayh-Dole Act*, uspto.gov (Dec. 9, 2010), http://www.uspto.gov/news/speeches/2010/Kappos_Bayh_Dole_Act_Remarks.jsp. From 1996–2007, it is estimated that university licensing contributed $187 billion to the U.S. gross domestic product and as much as $457 billion to U.S. gross industrial output, in addition to creating 279,000 new jobs. *See* David Roessner *et al.*, *The Economic Impact of Licensed Commercialized Inventions Originating in University Research, 1996-2007*, Biotechnology Indus. Org. 32, 34 (Sept. 3, 2009), http://www.bio.org/sites/default/files/BIO_final_report_9_3_09_rev_2.pdf. Importantly, technology transfer offices also support the creation of new businesses, as they are "showing an increased willingness to take equity as payment in licenses,

particularly with startups . . . ." AUTM Survey at 37. From 2007–2011, more than 3,000 startup companies were formed as a result of research performed under the Bayh-Dole Act. *See id.*

Significant artificial, progenitive technology has been discovered and developed under the Bayh-Dole Act.

Numerous artificial, progenitive technologies have been conceived, developed, and licensed under the technology transfer framework discussed above. Artificial, progenitive technology is a broad classification that includes any human-made technology in which a "parent" combination, substance, or manufacture is used to generate progeny having the same genetic makeup or characteristics as the parent. The progeny may then be used for the same purposes as the parent. One type of artificial, progenitive technology is at issue in this case—genetically modified soybeans.

Other artificial, progenitive technologies may include stem cells, mutant genes, DNA vectors and molecules, viral vectors, bacterial strains, RNA enzymes, cell lines, and organic computers. Existing patents directed to such technologies include the following: soybeans that minimize the need for hydrogenation when making vegetable oil (U.S. Patent No. 6,133,509); production of lactic acid for use in the manufacture of biodegradable plastic (U.S. Patent No. 7,629,162); stem cell cultures useful to identify genes related to disease and to test new therapies for treating, *inter alia*, degenerative neurological disorders (U.S. Patent No. 5,843,780);

cell lines for use in developing new treatments for cancer (U.S. Patent No. 5,989,837); genetically modified laboratory rats for use in developing new treatments for colon cancer (U.S. Patent No. 7,897,834); viral vectors for inoculating citrus trees against disease (U.S. Patent Application Pub. No. 2010/0017911); and fusarium-resistant wheat to avoid blight and increase yield (U.S. Patent No. 7,652,204).

These exemplary inventions are but a small sampling of the numerous technologies developed and licensed under Bayh-Dole that have significant public value. In the coming years, artificial, progenitive technologies promise to positively impact many aspects of Americans' lives. Reversal here would undermine those positive impacts.

ARGUMENT

I. REVERSING THE FEDERAL CIRCUIT WOULD DEPRIVE THE PUBLIC OF THE IMPORTANT BENEFITS OF ARTIFICIAL, PROGENITIVE TECHNOLOGIES

A. Reversal would greatly diminish, and add uncertainty to, the value of patents covering artificial, progenitive technologies.

Patent owners generally have the entire statutory patent term—currently set at 20 years from filing under 35 U.S.C. § 154(a)(2)—over which to recover their research and development costs. Reversal here would effectively shorten the patent

term for patents covering artificial, progenitive technologies, thus making it much more difficult, if not impossible, for patent owners and their licensees to recover the costs of developing such inventions for market. This would reduce, or even eliminate, any incentive to develop new artificial, progenitive technologies. The public would certainly be harmed under that scenario.

For artificial, progenitive technologies, reversal would force patent owners to try to recoup all of their research and development costs in the first sale of the technology. That is because the first buyers could sell progeny (and the progeny of progeny, *etc.*) at a fraction of the cost of the patent owner's price, for they have insignificant research and development costs to recover. In effect, first buyers could saturate the market for the technology. For instance, in this case, a buyer of Roundup Ready® seeds could parlay a single bag of seeds (approximately 3,500) into over two million seeds in a single year (assuming two consecutive plantings and harvestings per year, as Bowman did, to arrive at 3,500 x 26 x 26). *See* J.A. 100a. That same buyer could have over 1.5 billion seeds by the end of two years (2.3M x 26 x 26).

And even if every buyer that annually purchases Roundup Ready® soybean seed had purchased seed in year one of the patent, reversal would mean that a company like Monsanto would lose sales in all subsequent years of the patent. Each buyer could effectively create their own manufacturing mill. To recoup its research and

development costs, Monsanto would have to increase dramatically the price of its Roundup Ready® soybean seeds to a level unaffordable to farmers. In turn, the public would not benefit from Monsanto's invention. *See* Br. of Economists at 24–30.

If Bowman were to prevail, the market for Roundup Ready® soybean seeds (and similar artificial, progenitive products) would become saturated with progeny of generation *n* seed at lower prices,[4] sold by entities unburdened by research and development costs to recoup. Such a system of weak intellectual property protection would encourage a "race-to-the-bottom," where technologies are knocked off with little or no recourse against copyists. To compete in such a system, companies would have incentive to use potentially inferior methods or constituent parts to save costs, rather than innovating further to design around the patented technology. For artificial, progenitive technology, the policies underlying the patent system would be significantly undermined.

The practical result of such a system would be to create disparate patent terms—a shorter term for artificial progenitive technologies and a longer term for all other inventions. For the former, patentees and their licensees would receive protection only for

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[4] "Generation *n*" is used herein to refer to the generation sold by the commercial manufacturer. The nomenclature "*n*" is used instead of "first" because in many cases, the item sold to the public will be the progeny of a first generation (or the progeny of progeny, *etc.*) that was discovered or created by the inventor or commercial manufacturer.

as long as it takes first buyers to saturate the market with progeny. For the latter, patentees and their licensees would receive protection for the full statutory patent term.

The relative certainty of the patent system provides the currency for technology transfer and drives the effective operation of the Bayh-Dole Act. A ruling for Bowman would therefore inject uncertainty into the value of patents for artificial, progenitive technology. It would hinder collaboration between technology transfer offices and private sector entities to develop and commercialize such technology.

B. Reversal would devalue the extensive benefits achieved by the Bayh-Dole Act.

Beyond the specific impact to the value of patents covering artificial, progenitive technologies, reversal would palpably and negatively impact whether certain technologies ever make it to market to benefit the public. Reversal would fatally damage the risk-reward equation in patent law vis-à-vis artificial, progenitive technologies. The patent system is designed to reward inventors with a time-limited right to exclude, so they will share their inventions for the public good. For the higher-risk artificial, progenitive technologies where investment did occur, the risk to companies would be greater, and the reward would need to be higher to incent companies to license nascent technologies from universities. When the risk becomes too great, private sector entities may not take licenses at all.

The resulting domino effect would undermine the stated purposes of the Bayh-Dole Act and the success of the technology transfer system discussed above. Private sector entities would avoid licensing technology that is not protected by strong patent rights. Consequently, these entities would not develop useful products from this technology for the public benefit. The Bayh-Dole Act was designed to encourage public access to federally funded inventions through the use of the patent system and collaboration between research institutions and private sector entities. Reversing the Federal Circuit would undermine this fundamental objective of Congress. To ensure the ongoing success of Bayh-Dole and the technology transfer system, this Court should affirm the Federal Circuit's holding that Bowman infringed Monsanto's patents by "making" new seeds.

II. BOWMAN "MADE" NEW GENERATIONS OF INFRINGING SEEDS IN VIOLATION OF 35 U.S.C. § 271(a).

Even authorized purchasers of a patented article cannot make "a second creation of the patented entity." *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 346 (1961) ("*Aro I*"). Here, the Federal Circuit correctly held that Bowman "created a newly infringing article" by "plant[ing] the commodity seeds containing Monsanto's Roundup Ready® technology," thus producing (*i.e.*, making) subsequent generations of patented seeds. *Monsanto Co. v. Bowman*, 657 F.3d 1341, 1348 (Fed. Cir. 2011). Accordingly, even if Monsanto's patent rights in any later generation

seeds had been exhausted, Monsanto could nevertheless "call [its] monopoly, conferred by the patent grant, into play for a second time" once Bowman made the newly infringing seeds. *Aro I*, 365 U.S. at 346. The Federal Circuit's holding that, under the Patent Act, the term "make" encompasses Bowman's act of planting patented seeds to create subsequent generations of patented seeds is not only logically sound, but also comports with this Court's long-standing precedent.

A. Bowman impermissibly used patented generation *n+1* seeds to make infringing generation *n+2* seeds.

A patent confers "the right to exclude others from making [or] using . . . the invention throughout the United States . . . ." 35 U.S.C. § 154(a)(1). Direct patent infringement occurs when one "makes [or] uses . . . any patented invention, within the United States," without authorization from the patentee. 35 U.S.C. § 271(a). Although § 271(a) identifies "making" and "using" a patented invention as two acts constituting infringement, there is nothing problematic with the notion that one can infringe a patent by simultaneously *using* the patented article to *make* another, later generation of that same patented article.

For instance, imagine a patented machine that can be used to perform several functions, one of which is creating a copy of itself. To run the machine, the operator must simply press a button corresponding to the desired function. Suppose further that functions A and B result in the creation

of products A and B, respectively, which are both unpatented goods. By pressing the button to activate function A or B, the operator clearly *uses* the patented machine in the sense envisioned by § 154(a)(1) and § 271(a). *See Bauer & Cie v. O'Donnell*, 229 U.S. 1, 10–11 (1913) ("The right to use . . . embraces within its meaning the right to put into service any given invention."). Now suppose that function C results in the creation of product C, which is *another machine that is a replica of the patented machine*, and thus covered by the patent. By pressing the button to activate function C, the operator not only *uses* the patented machine, but also *makes* another, later generation of the patented machine. *See id.* at 10 ("The right to make can scarcely be made plainer by definition, and embraces the construction of the thing invented."). This constitutes a simultaneous *use* and *making* of two patented articles.

This case is analogous. Like the multi-functional hypothetical machine, the commodity seeds containing Monsanto's Roundup Ready® technology can be used to perform several different functions. For instance, functions A and B involve using the seeds for animal feed or human consumption, neither of which results in the creation of new seeds. Function C, however, involves using the seeds for planting and results in the creation of new seeds that carry the genetic makeup of the planted seed. *See Monsanto*, 657 F.3d at 1348 ("[N]othing in the record indicates that the 'only reasonable and intended use' of commodity seeds is for replanting them to create new seeds. Indeed,

there are various uses for commodity seeds, including use as feed.") (internal citation omitted).

Bowman "used" the original seeds (generation *n*) that he purchased from an authorized dealer of Monsanto. Through planting, germination and growing of the soybean crop, those original seeds were spent. The genetic material of the original seeds, however, was carried into the subsequent generation (generation *n+1*). There is no dispute that Bowman was permitted to *use* the generation *n* seeds to *make* generation *n+1* seeds. That permission may have been express (*i.e.*, under the Technology Agreement), or implied (*i.e.*, under the exhaustion doctrine) because one of the patents identified in the Technology Agreement claims a method of using generation *n* seeds to make generation *n+1* seeds. *See* Supp. J.A. 15–16 (claim 32).

Bowman sold the generation *n+1* seeds that he was authorized to make to a grain elevator operator. Bowman then purchased commodity seeds from that grain elevator operator with the intention of planting the commodity seeds later in the same year (*i.e.*, in his "second planting"). Bowman hoped that the commodity seeds would contain generation *n+1* seeds that he and other farmers had made in their single authorized planting of Roundup Ready® seed.

Bowman's hope was not mere surmise. Given that as of 2002, 83% of soybean farmers in Indiana purchased Roundup Ready® seed (94% as of 2007), Bowman reasonably expected that his purchased

commodity seed would contain the patented technology. *See* J.A. 34a, 121a ("It [had] occurred to [Bowman] that most of the farmers in his area were probably planting Roundup Ready soybeans."). Bowman confirmed his expectations when he applied Roundup® to his second planting. *See* J.A. 83a. Such application would be fatal to any soybean crop that did not contain the patented technology. Almost all of Bowman's soybean plants survived. Importantly, the crop that did survive uniformly contained the patented technology, and thus comprised generation *n+2* of the patented technology. Because Bowman was authorized only to "make" generation *n+1* seeds, his act of making generation *n+2* seeds constituted infringement.

Year after year, he repeated these steps, with a slight modification. Bowman retained (*i.e.*, "saved") some of the infringing seeds made from his second planting of the year (generation *n+2* in year 1) to plant as part of his second planting the following year. Bowman sold the remaining seeds back to the grain elevator operator. Bowman thereby introduced generation *n+2* and later generations into the commodity seed pool. Each year, Bowman's second planting included saved seeds from the previous year (*n+2* or later) along with the newly-purchased commodity seeds (*n+1* or later) to make yet further generations of patented seeds. *See* J.A. 76a.

Bowman could have stopped making seed at generation *n+1*. He could have put his own generation *n+1* seeds or the generation *n+1* seeds he

purchased from the grain elevator operator to many uses. But Bowman was neither expressly nor impliedly permitted to make anything beyond generation *n+1* seeds. Thus, Bowman could not *use* generation *n+1* commodity seeds to *make* generation *n+2* seeds. Because the generation *n+2* seeds were identical to Monsanto's patented seeds, they constituted newly infringing articles. The United States agrees that Bowman's use of the commodity seeds for planting simultaneously implicated Monsanto's exclusive right to "make" additional patented seeds. *See* Br. for United States at 23.

While there are differences between the hypothetical machine described above and the commodity seeds planted by Bowman, those differences only reinforce that Bowman both used and made patented seeds. First, unlike the hypothetical machine above, which was used to make a single copy of itself, every generation of seeds planted by Bowman replicated *twenty-six-fold*—that is, for every one seed he planted, Bowman grew 26 more of the same. *See* J.A. 100a. Employing a patented article, which has never been sold by the patent owner, to replicate the very same article in this manner, cannot fairly be held to be "use" apart from "making." Among other things, it is not even a "use" of the article (*i.e.*, the generation *n* seed) that was purchased by Bowman. And the exhaustion doctrine has always been analyzed on an article-by-article basis. *See, e.g.*, *Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617, 625 (2008) ("The longstanding doctrine of patent exhaustion provides that the initial authorized sale of a patented item

terminates all patent rights to that item."); *United States v. Univis Lens Co.*, 316 U.S. 241, 249 (1942) (discussing exhaustion of patent monopoly as applying only "with respect to the article sold"); *Mitchell v. Hawley*, 83 U.S. (16 Wall.) 544, 547 (1872) (asserting that, following an authorized sale, a patentee "ceases to have any interest whatever in the patented machine so sold and delivered").

Second, to activate the replicating function of the hypothetical machine, the operator merely had to push a button. Bowman, on the other hand, expended significantly more effort in making the generation *n+2* seeds. Not only did he have to plant the generation *n+1* seeds, but he also had to treat his crops with glyphosate-based herbicide (ensuring all remaining progeny was patented), irrigate his crops, harvest the new seeds, and so on. *See* Br. for United States at 26. Bowman's actions constituted a "making" of patented seed within the meaning of the Patent Act.

B. Exemptions for the infringement of plant patents do not apply to the utility patents at issue here.

Utility patents have existed in the United States since 1790. In enacting the Plant Variety Protection Act of 1970 ("PVPA"), Congress authorized an additional avenue for the issuance of patent-like protection for sexually-reproducing plants (*i.e.*, plants that reproduce by seed). *See Asgrow Seed Co. v. Winterboer*, 513 U.S. 179, 181 (1995). Since at least 1985, soybeans like Monsanto's could be covered by either utility patents under Title

35 or plant variety protection under Title 7. *See J.E.M. Ag Supply*, 534 U.S. at 131 ("It has been the unbroken practice of the [Patent Office] since [1985] to confer utility patents for plants."); *see also id.* at 144 ("The plain meaning of [35 U.S.C.] § 101, as interpreted by this Court in *Chakrabarty* [(1980)], clearly includes plants within its subject matter."). The exemptions to infringement under the PVPA (for saving seed and research under 7 U.S.C. §§ 2543 and 2544) apply only to plant variety certificates issued under Title 7. But Monsanto chose utility patents (under Title 35) for its soybean technology. Therefore, the PVPA exemptions do not apply here.

Nevertheless, those exemptions further demonstrate that the Federal Circuit's holding was correct. In passing the PVPA, Congress recognized the use-to-make cycle that characterizes seed and crop production. Specifically, the PVPA's seed-saving exemption to patent infringement provides in relevant part that:

> [I]t shall not infringe any right hereunder for a person *to save seed produced by the person from seed obtained*, or descended from seed obtained, by authority of the owner of the variety for seeding purposes *and use such saved seed in the production of a crop for use on the farm of the person*, or for sale as provided in this section.

7 U.S.C. § 2543 (emphasis added). Although this provision speaks of "production" instead of "making,"

it nonetheless conveys the concept that seeds are *used* to *create* crops. In the case of soybeans like Monsanto's, the seed and the crop are the same, such that seeds are used to create more seeds that are genetically identical. Thus, the PVPA's language underscores the legitimacy of the use-to-make theory, particularly as applied to soybeans.

Bowman argues, mistakenly, that this use-to-make theory "seeks to carve out *permissible* and *impermissible* uses under patent law for articles subject to the exhaustion doctrine," and "enjoys no support in the Patent Act or in this Court's exhaustion law." Pet'r's Br. at 38–39 (emphasis in original). Bowman overlooks that the Court's exhaustion jurisprudence has always distinguished, at least implicitly, between permissible and impermissible uses of a patented article. Under the exhaustion doctrine, an authorized purchaser of a patented invention may *use* the invention without liability, but is never allowed to *make* the invention anew. *See Mitchell*, 83 U.S. (16 Wall.) at 548 ("[T]he purchaser of the implement or machine for the purpose of using it in the ordinary pursuits of life . . . does not acquire any right to construct another machine . . . ."). It follows that exhaustion applies only to those uses of the patented invention that do not involve making a copy of the invention. This distinction is clearest in the repair/reconstruction cases: repairing the original article is a permissible "use" while reconstructing the invention using the spent, original article is not, because the latter use also involves making the invention anew. *See Aro I*, 365 U.S. at 604

("[R]econstruction of a patented entity . . . is limited to such a true reconstruction of the entity as to 'in fact make a new article' . . . ." (internal citation omitted)); *see also Am. Cotton-Tie Co. v. Simmons*, 106 U.S. 89, 94–95 (1882) (finding impermissible reconstruction where defendants *used* parts of spent, patented cotton ties to *make* newly infringing cotton ties). Therefore, the Court should simply apply its long-standing precedent to hold that, in this case, Bowman impermissibly used the patented commodity seeds to make new infringing seeds.

C. The Court can affirm the Federal Circuit without definitively construing the term "making."

Bowman submits several reasons why his planting activities did not constitute "making" patented seeds, and further attacks the definitions of "to make" proffered by the United States. But there is no need in this case to definitively construe the terms "making" and "makes" as codified in 35 U.S.C. § 154(a)(1) and § 271(a), respectively. At most, the Court need only decide that the Federal Circuit correctly held that Bowman's act of using generation *n+1* seeds to create generation *n+2* seeds constituted infringement, *i.e.*, an infringing "making," whatever that term means as used in the Patent Act.

Bowman and his supporting *amici* erroneously suggest that the only way to "make" the patented seeds as envisioned by § 271(a) is to *genetically engineer* them using the techniques disclosed in Monsanto's patents. *See* Pet. at 19; Br. for *Amici Curiae* Ctr. for Food Safety *et al.* at 34–38. They

assert that "making" does not encompass growing identical copies of the patented seeds from previous generations of seeds. *See id.* There is, however, no support in this Court's precedent for the notion that "making" an infringing article necessarily involves building that article from its starting materials or building blocks. For instance, over a century ago in *American Cotton-Tie*, the Court held that the defendants impermissibly reconstructed (and thus "made") patented cotton ties, even though in doing so, the defendants *re-used* metal buckles already fashioned by the patent owner, rather than forging new buckles themselves. *See* 106 U.S. at 94 ("As a tie the defendants reconstructed it, although they used the old buckle without repairing that."). Thus, it cannot be that under § 271(a), "making" a patented article requires engineering it from square one. Genetic modification is one way to "make" Roundup Ready® seeds, but not the only way.

III. THE COURT SHOULD NOT HUMOR MISPLACED CONCERNS ABOUT "INNOCENT INFRINGERS."

Bowman's supporting *amici* stress that affirmance will render "innocent infringers" vulnerable to liability for inadvertently planting Monsanto's Roundup Ready® seeds and thereby making new infringing seeds. *See, e.g.*, Br. of Pub. Patent Found. at 3 ("The Circuit's finding that planting seeds is 'making' them for purposes of infringement makes a patent infringer out of any organic or conventional farmer whose land is contaminated with Monsanto's genetically modified seed."); Br. of *Amicus Curiae* Knowledge Ecology Int'l

at 10–11; Br. for *Amici Curiae* Ctr. for Food Safety *et al.* at 38. Such concerns have no place in this matter. The Court has never considered intent to be a relevant consideration in its exhaustion jurisprudence, this case presents no unique issues regarding innocent infringement, and in any event, Bowman is not an "innocent infringer."

A. Intent is irrelevant under the exhaustion doctrine.

Courts faced with exhaustion questions generally must decide whether the patentee exhausted his rights in a patented article and/or whether a purchaser of that article infringed the patent. In assessing the purchaser's liability for infringement, courts do not consider his "intent, culpability or motivation" because infringement is a strict liability offense. *Jurgens v. CBK, Ltd.*, 80 F.3d 1566, 1570 n.2 (Fed. Cir. 1996).[5] The purchaser's mental state also has no bearing on whether the patentee exhausted his rights. In sum, the intent of the accused infringer plays no role in the exhaustion analysis. Indeed, this Court's exhaustion jurisprudence has never turned on the accused infringer's intent. The Court should not now change its course by considering the impact of its exhaustion decision on "innocent infringers" down the line.

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[5] For patent infringement issues, courts consider intent only to determine whether there was indirect infringement, *see, e.g.*, *Global-Tech Appliances, Inc. v. SEB S.A.*, 131 S. Ct. 2060, 2065 (2011), and whether an accused infringer acted *willfully*, thereby entitling the patentee to increased damages. *See Jurgens*, 80 F.3d at 1570–71.

B. This case does not raise any unique "innocent infringement" concerns.

People unknowingly infringe patents every day. For example, imagine that a cellular-phone manufacturer makes and sells cellular phones that infringe another's patent. By using one such infringing cellular phone, the user becomes an infringer, whether the user knows it or not. *See* 35 U.S.C. § 271(a) ("[W]hoever without authority . . . uses . . . any patented invention, within the United States . . . infringes the patent."). The cellular-phone users in this example are indistinguishable from the "innocently infringing" farmers that Bowman's supporting *amici* so zealously seek to protect. Yet, despite the abundance of cellular-phone-related patents being asserted in U.S. courts, *see, e.g.*, *Factbox: History of the mobile technology patent war*, Reuters (July 5, 2012, 8:05 AM), http://www.reuters.com/article/2012/07/05/us-apple-google-patents-idUSBRE8640IX20120705 ("Mobile technology has been a hotbed of patent litigation in recent years . . . ."), no "innocent infringement" problems exist. By affirming, the Court will in no way open the door to some previously unknown form of liability for inadvertent infringers. "Innocent infringement" is a natural byproduct of a strict liability patent system.

Furthermore, patent holders like Monsanto have no incentive to litigate against truly innocent infringers. The cost of doing so would dwarf the value of available remedies. Indeed, Monsanto currently adheres to a policy of not "exercis[ing] its patent rights where trace amounts of [its] patented

seed or traits are present in [a] farmer's fields as a result of inadvertent means." *See Monsanto's Commitment: Farmers and Patents*, http://www.monsanto.com/newsviews/Pages/commitment-farmers-patents.aspx (last visited Jan. 22, 2013).

Moreover, the supposed "innocently" infringing farmer would achieve the benefits of the patented invention only if, while believing his crop to be susceptible to Roundup® herbicide, he nevertheless applied Roundup®, an application that would (in his mind) likely decimate his crop. Of course, if a farmer harvested the inadvertently present patented seeds once, realized they were Roundup Ready®, yet continued to plant the progeny seeds, apply Roundup®, and reap the benefits of the patented Roundup Ready® trait, he could no longer claim to be an "innocent infringer."

C. Bowman was not an "innocent infringer."

The record dispels any notion that Bowman "innocently" made Monsanto's patented seeds. Bowman systematically used the grain elevator as a type of straw-man to circumvent Monsanto's patent rights. Thus, there should be no reservations about the impact of this decision on "innocent infringers." Bowman was no such person.

Bowman began buying back commodity seeds from the grain elevator operator because he "wanted a cheap source of seed." J.A. 77a–78a; *see* J.A. 140a–41a. He explained that he treated the commodity

seeds with glyphosate-based herbicide, deliberately killing any plants germinated from unpatented seed:

> I decided that I would go and get them [the commodity seeds] and then check them out and see if Glyphosate or Roundup would kill them and enough of them lived that I decided that — of course I knew after the first initial purchase and I knew what everything left — after I sprayed them and what's left I knew they were resistant to Roundup.

J.A. 83a. When asked if he hoped the commodity seeds he bought were Roundup Ready® seeds, Bowman replied, "I certainly didn't object, so if I didn't object, then I guess I had the hope that they were Roundup [Ready]." J.A. 84a. Indeed, prior to buying seeds back from the grain elevator operator, "[it had] occurred to [Bowman] that most of the farmers in his area were probably planting Roundup Ready soybeans," J.A. 121a, such that substantially all of the commodity seeds in the grain elevator would possess the patented trait. Bowman also admitted to knowing that the first-generation Roundup Ready® seeds were patented and subject to certain limitations:

> I just bought commodity beans and I wanted to know if they were Roundup or non-Roundup and since they were resistant to Roundup, why I kept them and used them because I didn't consider

> them as a patented product. I knew I couldn't keep a patented product and I agreed not to keep my beans that I purchased.

J.A. 77a–78a.

Significantly, Bowman's method of buying commodity seeds from the grain elevator for planting was neither common practice among farmers, nor legal. *See, e.g.*, Br. of Am. Soybean Ass'n *et al.* at 25. Bowman did not know of any other farmers engaged in the practice of planting commodity seeds, and he understood that Indiana law prohibited the grain elevator from selling him commodity seeds for planting. *See* J.A. 84a–85a. Bowman could not "say whether [he] told [the grain elevator] or not" of his intention to plant the commodity seeds. J.A. 77a. Bowman simply "assumed" the grain elevator operator knew that Bowman was planting the commodity seeds because the operator "knew [Bowman] didn't have any hogs to feed and he knew [Bowman] couldn't eat that many." *Id.* And although Bowman told Monsanto, in 1999, that he planned to save seed (a plan he abandoned after Monsanto objected), *see* J.A. 21a, there is no evidence that Bowman told Monsanto of his subsequent, illegal plans for the commodity seed before implementing those plans.

Bowman thus methodically and strategically bought commodity seeds from the grain elevator for planting, hoping that a large percentage would contain the Roundup Ready® trait. He selectively

propagated only those seeds containing the patented trait by treating his crops with glyphosate-based herbicide. Given the high percentage of farmers in Bowman's area who used the Roundup Ready® seeds, the odds were in Bowman's favor that the commodity seeds he purchased would contain the patented trait. Further, each time he completed this process, planted his "saved" seed and brought his harvested seed to the grain elevator, Bowman ensured that an ever-increasing percentage of the commodity seeds in the grain elevator would contain the patented trait. Bowman apparently knew *exactly* what he was doing in planting the commodity seeds, and had a particular goal in mind—to obtain the benefits of Monsanto's patented seeds without compensating Monsanto. Bowman was not an "innocent infringer."

CONCLUSION

Reversal in this case would weaken patent rights for artificial, progenitive technologies and upset the flourishing innovation system created by U.S. patent law through the Bayh-Dole Act and technology transfer organizations. *Amici* therefore urge this Court to affirm the judgment of the Federal Circuit to ensure that the public will continue to benefit from the important work of *amici*, particularly in the area of artificial, progenitive technologies.

Respectfully submitted,

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